

UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF TEXAS
WACO DIVISION

JENS H.S. NYGAARD

Plaintiff,

v.

FÉDÉRATION INTERNATIONALE DE
L'AUTOMOBILE, FORMULA ONE
MANAGEMENT LTD., FORMULA ONE
WORLD CHAMPIONSHIP LTD.,
MERCEDES-BENZ GRAND PRIX LTD.,
DAIMLER AG, LEWIS HAMILTON, RED
BULL TECHNOLOGY LTD., RED BULL
RACING LTD., FERRARI S.P.A., CHARLES
LECLERC, AND DALLARA AUTOMOBILI
S.P.A.

Defendants.

Case No. 6:20-cv-00234-ADA

JURY TRIAL DEMANDED

**FOURTH AMENDED AND FIRST SUPPLEMENTAL COMPLAINT FOR PATENT
INFRINGEMENT**

I. INTRODUCTION

1. Plaintiff Jens H. S. Nygaard (“Nygaard”) files this Fourth Amended and First Supplemental Complaint for infringement of his United States Patent No. **7,494,178** (“the ’178 patent”) in violation of Sections 271(a), (b), (c) and (f) of Title 35 of the United States Code, by Fédération Internationale de l’Automobile (“FIA”), Formula One Management Ltd. (“FOM”), Formula One World Championship Ltd. (“FOWC”), Mercedes-Benz Grand Prix Ltd. (“Mercedes”), Daimler AG (“Daimler”), Lewis Hamilton (“Hamilton”), Red Bull Technology Ltd. (“RBT”), Red Bull Racing Ltd. (“RBR”), Ferrari S.p.A. (“Ferrari”), Charles Leclerc (“Leclerc”), and Dallara Automobili S.p.A. (“Dallara”) (collectively, “Defendants”), by making, using, selling, offering for sale or importing the “Halo” and “Aeroscreen” devices in the United States for

implementation in cars in the United States; making and using road vehicles in the United States with Halo or Aeroscreen devices installed in them; causing to be supplied substantial components of the vehicles implementing the Halo and Aeroscreen from the U.S. for assembly abroad in a manner that would infringe the patent, and/or indirectly causing others to do so. The patented inventions are in structures to protect the heads and necks of drivers in the U.S. Grand Prix, the U.S. ePrix,¹ Formula 3 events in the United States, and their U.S.-based teams, the NTT IndyCar 500 Series, other IndyCar Circuits, and also their U.S.-based teams. Infringement is alleged both literally and by doctrine of equivalents, of claims 1, 2 and 4 of the '178 patent.² Incorporated by reference are the Third Amended Complaint including its Exhibit A (the '178 patent), Exhibit B (the June 4, 2021 final infringement contentions); and Exhibit C (the infringement contentions for a new claim for declaratory judgment based on the model of the newly announced F1 2022 car). The changes between the Third Amended Complaint and this pleading are underlined, so that Defendants need only answer to the changed paragraphs (unless they are required to change any prior answer based on discovery).

A. The Halo

2. The Halo is a device that is integrated into Formula 1 ("F1"), Formula E, Formula 3, and other "Formula" cars.

3. The Halo was used in Formula 1 racing in 2018, 2019, 2020 and 2021.

¹ Formula E refers to Formula racing with electric cars.

² Defendants Mercedes, Daimler, Ferrari, Leclerc and Hamilton, have been dismissed without prejudice based on the "customer-suit exception," and Plaintiff alleges they are bound by the results of the lawsuit with FIA. Dallara was dismissed without prejudice for lack of personal jurisdiction. They remain in the complaint in the event the customer-suit exception or personal jurisdiction grounds change. Additional allegations of personal jurisdiction are added as to Dallara consistent with Plaintiff's Motion for Reconsideration of dismissal of Dallara. They are also included to the extent needed to preserve Plaintiff's future rights in the course of this litigation.

4. The Halo is designed to protect the drivers' heads and necks in accidents and from debris.

5. No driver has died of or suffered a serious head or neck injury in a Formula car with a Halo.

6. The Halo is credited with saving several drivers in Formula events from death or serious injury, including Romain Grosjean at the 2020 Bahrain Grand Prix, Charles Leclerc at the 2018 Belgian Grand Prix, and others in open cockpit Formula races in 2018, 2019, and 2020.

7. The Halo prevented debris from falling on Max Verstappen at the 2021 British Grand Prix after he crashed into a safety barrier.

8. The Halo prevented debris from falling on Charles Leclerc at the 2020 Italian Grand Prix after he crashed into a safety wall.

9. The Halo was used by every race car that competed in the 2018 U.S. Grand Prix.

10. The Halo was used by every race car that competed in the 2019 U.S. Grand Prix.

11. The Halo was used by every race car in Formula 3 events in the U.S. in 2019 and thereafter.

12. The Halo was used in the 2021 U.S. Grand Prix.

13. A model of the 2022 Formula 1 car was made public by FOM and FIA in or around July 15, 2021. This model included a Halo.

14. The regulations adopted for 2022 require the use of the Halo in all Formula 1 Grand Prix events in the same way, for the same purposes, in approximately the same configuration as deployed this year and in 2018 and 2019.

15. The Halo has enabled the growth of the popularity of Formula 1 racing by protecting preventing deaths and serious injuries to drivers.

16. The Halo has enabled campaigns to enhance the popularity of Grand Prix drivers because it has eliminated mortal and serious injuries to drivers' heads and necks in accidents in Grand Prix events.

17. The Halo permits for publicizing of attention-grabbing accidents without driver deaths—as, for example, the accident involving Romain Grosjean on November 30, 2020, at the Bahrain Grand Prix as highlighted in Season 3, Episode 9 of the Netflix show, “Drive to Survive,” “Man on Fire.” Other examples, include the accidents involving Max Verstappen and Lewis Hamilton at the 2021 British Grand Prix and the 2021 Italian Grand Prix, among others.

18. The Halo has facilitated rule changes by the teams, FOM, FWO and FIA to encourage more competitive driving by eliminating head and neck injuries in accidents in Formula 1 racing and IndyCar Circuits racing. For example, 2022 rule changes for Grand Prix racing are intended to enable closer car positions during races, more overtaking during races, and other maneuvers to make racing more competitive and exciting for fans.

19. The U.S. Grand Prix is a premier sporting and entertainment event in Texas. Vehicles with Halos are used in the U.S. Grand Prix events and race to entertain ticket-holders, to make video and copyrighted materials for broadcast within and from the U.S. abroad, to make other video, audio and recordings of racing events and race related entertainment, which are shown on networks such as ESPN, Netflix, YouTube, and other outlets, and to promote merchandise and video games tied to F1 Grand Prix racing. The Halo has been used to enhance the quality and value of this entertainment, and related activities and products, by protecting drivers from serious injury in racing during these events.³ Vehicles with Halo are used as the focus of these events and

³ By way of example, among other things, FOM and FOWC also use vehicles with the Halo to make video and copyrighted material for “Drive to Survive” in cooperation with Netflix and Box

materials. The racing cars with Halos, and the value of these events, are used by FIA to charge site fees to the venue, COTA. This event was highly successful with the biggest weekend attendance of any F1 Grand Prix weekend in the 2021 season (over 400,000 fans), and television audience of about 150% of the average Grand Prix race in 2021.

B. The Aeroscreen

20. The Aeroscreen is a safety device deployed in cars competing in the NTT IndyCar 500 Circuit and other IndyCar Circuits.

21. The Aeroscreen includes a Halo-type component that performs the same function in the same way in approximately the same configuration as the Halo.

22. Although only first deployed in the 2020 NTT IndyCar 500 season, the Aeroscreen has saved the lives of several drivers from death or injury, including in a major accident in a race in Iowa on July 18, 2020, in an accident on August 27, 2020, a race in Alabama on April 21, 2021, and at a race in Texas on May 2, 2021.

23. No driver has suffered a head or neck injury in a car with an Aeroscreen in Indy500 or IndyLights racing.

C. Overview of Development of the Halo

24. After the death of driver Henry Surtees in a Formula 2 event in 2009, FIA and/or the FIA Institute for Motorsport and Sustainability (“the FIA Institute”)⁴ committed resources to

To Box Productions. They are also used by Defendants to make video games from simulations and video and audio of racing in the U.S. at COTA and other tracks. Further, FOM has its own channel on YouTube with 5.86 million subscribers, on which it posts videos hosted on servers in the U.S. for viewing on computers and other devices in the U.S, including video of U.S. racing. Likewise, Red Bull Honda’s YouTube channel has nearly 1 million subscribers. FIA also has a YouTube channel.

⁴ FIA formed the FIA Foundation in 2001 as its charitable arm, and these organizations formed the FIA Institute in 2004. FIA closed the FIA Institute at the end of 2016 and took over the “Halo” development effective January 1, 2017.

research improvements for protection for drivers' heads and necks in open cockpit (Formula) racing.

25. This concern grew after the death of Dan Wheldon in open cockpit (IndyCar 500) racing.

26. In 2011, the FIA and/or the FIA Institute, tested different options for protection of drivers, including a "jet fighter canopy" and other devices based on adding structures around the driver.

27. IndyCar also wanted to develop safety measures to address these same risks in its open cockpit racing.

28. Upon information and belief, FIA and the FIA Institute garnered cooperation from F1 Grand Prix teams and others, including IndyCar for their safety research ("the Project"). Dr. Trammell of IndyCar participated in meetings of the FIA Institute on a quarterly basis since 2011.

29. Both the Halo and the Aeroscreen have their genesis in the Project.

30. The Halo was developed after a series of meetings among Andy Mellor, Paddy Lowe, Didier Perrin, Luca Pignacca and others with Mr. Nygaard from November 2012 to March 2013 in Paris, at McLaren in Woking, England, and FIA Headquarters in Paris.

31. At a meeting on March 27, 2013, at FIA Headquarters in Paris, France among him, the FIA Institute, FIA and Dallara, Mr. Nygaard explained the benefits of his patented inventions to make open cockpit racing safer for drivers.

32. At this meeting, Mr. Nygaard discussed how his inventions used binocular vision technology ("BVT") to permit for use of a center pillar to protect drivers' heads and necks in collisions, rollovers, crashes, and from large flying debris.

33. At this meeting, Mr. Mellor, Mr. Pignacca and Mr. Perrin had notebooks that included copies of Mr. Nygaard's European Patent Office (EPO) patent application.

34. At this meeting, Mr. Mellor gave Mr. Nygaard a graphic showing a design of a structure with a center pillar over and around the cockpit of an open cockpit car based on the '178 patent.

35. Mr. Mellor, Mr. Perrin and Mr. Pignacca each had notebooks with them at the March 27, 2013 meeting. Their notebooks each contained a copy of a counterpart application to Mr. Nygaard's U.S. application for the '178 patent, which included the same inventions and overlapping language and drawings.

36. Mr. Nygaard's patents as well as pending applications, were discussed at this meeting.

37. Mr. Mellor and others at the meeting discussed bringing Mercedes into the development process for the Halo.

38. After the meeting, FIA created an April 3, 2013, "Action Plan for Single Seat Driver Evaluation." This work plan was based on the discussion at the March 27, 2013 meeting. It included as its first action item that "AM" (Andy Mellor) would initiate creation of "BVT Principles' technical specification with JHSN to be completed by April 25, 2013."

39. Sometime after the meeting, Mr. Mellor emailed Mr. Nygaard and Mr. Pignacca the work plan and a copy of a counterpart application to the U.S. application that had resulted in issuance of the '178 patent in 2009 and other materials. A follow up meeting was scheduled for April 17, 2013 in London.

40. Materials for the April 17, 2013, meeting were circulated with a cover page titled, "Potential Application of Binocular Vision Transparency in Motor Sport and Mobility."

41. Mr. Paddy Lowe became technical director of Mercedes on June 3, 2013, among his assignments at that time were to supervise the development of additional safety measures for F1 racing. Mr. Lowe was technical director at Mercedes during its work on the Halo in 2015-2016 when the design of the Halo was finalized and testing completed. The Halo was ready such that it could have been adopted for Grand Prix racing by July 2016 and deployed for the 2017 season.

42. Following the March 27, 2013 meeting, Mr. Nygaard sent a letter to FIA setting forth his proposed terms for a license to his patents for safety devices.

43. In response to his letter, Mr. Nygaard was asked to join a meeting with the FIA Institute's administration in London on or about April 5, 2013.

44. At that meeting, the FIA Institute demanded that Mr. Nygaard give over his patent rights to FIA royalty-free and with no guarantee of payment of any kind for any purpose. Mr. Nygaard refused. He was then excluded from further personal involvement in developing a safety device to protect drivers' heads and necks in Formula racing.

45. On May 31, 2013, the FIA Institute once again reached out to Mr. Nygaard by letter regarding terms for a license to his '178 patent. Again, FIA demanded use of Mr. Nygaard's intellectual property royalty-free.

46. At some point after Mr. Nygaard's meetings with Mr. Mellor, Mr. Lowe, Mr. Pignacca, and others in 2012 and 2013, Mercedes ultimately took the lead in developing a safety device with a pillar in front of the driver based on Binocular Vision Transparency "BVT principles," which became known as the "Halo."

47. The press for improved protection for drivers' heads and necks intensified after the deaths of Jules Bianchi following an accident at the 2014 Japanese Formula One Grand Prix and Justin Wilson at a 2015 IndyCar 500 race at the Poconos Speedway.

48. In late 2015 and early 2016, the Grand Prix Drivers' Association Ltd. ("GPDA") petitioned for improved driver safety protection.

49. In 2015, elements of the F1 Grand Prix Series fan base and press were urging Formula One and FIA to take measures to prevent any more driver deaths.

50. Mercedes showed its prototype Halo in 2015.

51. Ferrari implemented the Halo on a Grand Prix car in early 2016, and tested the Halo during the 2016 Spanish Grand Prix events.

52. Other options for protection of drivers' heads and necks studied in 2016 were the "Shield" and RBT's early version of the Aeroscreen, neither of which had a pillar in the center of the cockpit in the field of vision of the driver, as was taught in the '178 patent.

53. In 2016, both the GPDA and FIA urged the F1 Strategy Group to adopt the Halo for F1 Grand Prix racing.

54. In 2016, Hamilton advocated for adoption of the Halo.

55. On information and belief, safety devices for Formula racing that covered (e.g., canopy) or partially blocked the view of the driver (e.g., the Halo) were controversial with F1 teams.

56. Any obstruction of the view of the drivers was controversial with fans who felt these types of modifications violated the spirit of open cockpit racing at the heart of Formula racing.

57. In spring of 2016, it appeared that the Halo was the only effective measure to protect Formula drivers' heads and necks. Nonetheless, despite lobbying by the drivers, there was substantial division among the F1 Strategy Group over whether to adopt the Halo because of its aesthetics. Further, among other things, the F1 Strategy Group did not want to adopt a canopy or

closed cockpit solution because it would have eviscerated Grand Prix racing's open cockpit format and tradition. At a 2016 meeting, the F1 Strategy Group delayed consideration of the Halo in order to explore other alternatives, including RBT's Aeroscreen, and development of a device known as the "Shield."

58. RBT demonstrated its Aeroscreen at the 2016 Russian Grand Prix shortly after an April 2016 meeting of the F1 Strategy Group where the Halo was discussed, putting its product in competition with the Halo.

59. The Shield was made out of "jet fighter glass" and bent around the driver leaving an opening at the top. Ferrari agreed to further develop and test the Shield.

60. Ferrari ultimately tested the Shield on an F1 car at events around the 2017 British Grand Prix at Silverstone.

61. Ferrari driver, Sebastian Vettel, drove the Ferrari test on July 14, 2017, but aborted it after one lap, reporting that the curvature of the Shield made it difficult to see, especially in looking forward. He also reported the Shield made him dizzy.

62. Although the Shield was scheduled for another test in September 2017 at the Italian Grand Prix, further testing cancelled after the unsuccessful run in England.

63. Under the 2013-2020 Concorde Agreement that governs Formula 1 Grand Prix Racing, the F1 Strategy Group adopted rules for F1 Grand Prix Racing. The rules it adopted had to be ratified by the F1 Commission, and then implemented in the regulations by the FIA. The F1 Strategy Group included the entities that worked on development of solutions for protection for drivers' heads and necks: Mercedes, Ferrari, Red Bull, and FIA along with FOM.

64. Liberty Media Corporation ("Liberty Media") purchased F1 as of January 2017.

D. Adoption of the Halo in Formula Racing

65. FOM's Ross Brawn, FIA's Jean Todt, Toto Wolff, principal of Mercedes, Christian Horner, principal of RBR, and principals of Ferrari and other teams participated in a meeting of the F1 Strategy Group in July 2017. All teams competing in Formula One Grand Prix racing at the time were represent at the meeting even though not all of them were voting members of the F1 Strategy Group.

66. The F1 Strategy Group (the member teams, FIA and F1) unanimously voted to adopt the Halo at the July 2017 meeting.⁵ Based on recommendations from technical representatives of FIA and the F1 Teams, FIA subsequently adopted rules for implementation of the Halo in Formula One, Formula 2, Formula E, Formula 3 and other Formula circuits.

67. In the 2020 contracts, including the Concorde Agreement, among the teams, FOM, FOWC (and/or related entities) and FIA, the F1 Strategy Group has been eliminated.

68. Vehicles and their components were supplied from the U.S. to other countries following the U.S. Grand Prix events for assembly into the invention abroad.

69. F1 teams disassemble their vehicles down to sub-assemblies and component parts for shipment to the next race.

⁵ At the time of the 2017 meeting, the process for adoption of rules was described as follows: "The sport's regulations are currently set by a procedure involving the F1 strategy group, the F1 commission and the World Motor Sport Council. The strategy group, consists of five permanent members, Red Bull, Mercedes, Ferrari, McLaren and Williams plus the highest non-qualifying team (Force India) and Ecclestone, representing FOM, and Todt the FIA, where each party has equal weight." Giles Richard, "*FIA should take greater role in F1 governance, says Jean Todt*," GUARDIAN, U.S. EDITION, FORMULA 1 2016, <http://www.theguardian.com/sport/2016/jun/23/fia-should-take-greater-role-in-f1-governance-says-jean-todt> (last visited Sept. 7, 2020). Mr. Todt is quoted in the article as saying, "The governing body [FIA] has not enough power, or influence to have the final say on the rules." *Id.*

70. Vehicle chassis and the Halos are separately packaged from other components, including power units, windscreens, steering wheels, and racing tires, among others, but can be, and in some instances are, shipped attached to the safety cell.

71. F1 facilitates the movement of teams and their equipment between races before and after the U.S. Grand Prix in conjunction with DHL Holdings Express and Dell Will Customs Brokers.

72. The parts shipped include the Halo, chassis, tires, and other parts of the race cars. The small “jagged windscreens” or small strip windscreens, are shipped by different teams in different ways: e.g., leaving them fixed to the front of the safety cell, shipping them with cargo, etc. These windscreens were used in the 2018, 2019 and 2021 U.S. Grand Prix Races.

73. FOM and FOWC, induced and caused to be supplied the components that make up substantially all of the invention, as well as components that have no substantial non-infringing use (that is, the vehicle chassis with the Halo), which if assembled in the U.S. would infringe the ’178 patent.

74. There are two U.S.-based Formula E teams, BMW Andretti Motorsport and Geox Dragon, and both were required to use Spark Gen2 cars that incorporated the Halo for the 2019 and 2021 U.S. ePrix and other ePrix races.

75. Dallara worked on the chassis implementing the Halo for these cars.

76. Upon information and belief, these teams used their cars on U.S. roads in preparation for and during the July 2019 U.S. ePrix, and the 2019-2020, and 2020-2021 Formula E Seasons.

77. Formula E teams supplied or caused to be supplied components that make up all or substantially all of the invention, including their vehicle chassis with the Halo, and other custom

components with no substantial non-infringing use, but for use in a Spark Gen2 car from the U.S. abroad for ePrix racing after the July 2019 and July 2021 U.S. ePrix, which would infringe the '178 patent if assembled in the U.S.

78. DHL Express has a relationship with Formula E racing. DHL Express worked with about nine Formula E teams who supplied their vehicles and components to other countries following the 2019 and 2021 U.S. ePrix events, including Daimler's HWA Racelab team in 2019 and Mercedes' Formula E team in 2021. Upon information and belief, these teams would have shipped their vehicle chassis implementing the Halo separately from at least some other parts of their cars. DHL Express transported these cars and parts into the U.S. for these races and transported cars for Mercedes, HWA and other European teams outside of the U.S. after these races were over.

E. Halo Enables Successful Media Campaigns Spotlighting Drivers

79. Liberty Media, FOM and/or FOWC implemented a strategy of growing the Formula 1 Grand Prix fan base that relied heavily on social media and other media ("Media Campaign").

80. This strategy made extensive use of featuring the drivers as stars.

81. This strategy included what became the series "Drive to Survive" on Netflix, which was filmed starting with the 2018 racing season, and continuing for the 2019, 2020 and 2021 seasons.

82. Season 1 of "Drive to Survive" included material on the Halo's safety impact in the accident involving Charles Leclerc at the 2018 Belgian Grand Prix.

83. Season 3 of "Drive to Survive" included material about the Halo's safety impact in the accident involving Romain Grosjean at a November 30, 2020 race at Bahrain.

84. The Media Campaign includes extensive use of social media and internet communications.

85. The Media Campaign has succeeded in helping to grow the popularity of Formula One Grand Prix Racing in the United States.

86. By putting a spotlight on Formula One drivers, the Media Campaign increased the need for driver safety.

87. The Media Campaign was enabled by the Halo because it prevented driver deaths and serious injury from trauma to their heads and necks when racing.

88. Mercedes has stated in its filings with the U.K. Companies House that it generated over \$5 billion in advertising revenue each year for Daimler AG's Mercedes-Benz brand.

89. Ferrari's Form F-20 filed with the U.S. Securities Exchange Commission (SEC) discusses the importance of the Scuderia Ferrari Racing Team and several of its drivers, including Charles Leclerc, to its brand.

~~90.~~ FOM, FOWC and FIA have added a second U.S. race to the 2022 schedule in the Miami Florida area. Tickets for the Miami race are sold out.

F. Halo in the United States

91. The U.S. Grand Prix has been held at Circuit of the Americas ("COTA") in Del Valle, Texas (Austin area) since 2012.

92. Upon information and belief, FIA was paid substantial fees by COTA to host the 2018 and 2019 Grand Prix events (approximately \$30 million in 2019 alone).

93. The State of Texas has reimbursed COTA for all or most of these fees.

94. In 2018, 2019, and 2021, a disproportionate amount of the revenue from Grand Prix's international racing circuit was raised from or in the United States, including the U.S. Grand

Prix. About one-half of the revenue from Formula One Grand Prix Racing that was distributed to the ten teams went to Ferrari, RBR and Mercedes in those years.

95. All teams and drivers in the U.S. Grand Prix races in 2018, 2019 and 2021 used the Halo on their cars.

96. All of the drivers in the U.S. Grand Prix races in 2018, 2019 and 2021 wore helmets with visors that met FIA regulations.

97. All of the cars in the 2018, 2019 and 2021 U.S. Grand Prix races were capable of having windscreens fitted to them, and nearly all of them did for these races, including drivers for Mercedes, Red Bull and Ferrari.

98. Drivers for Mercedes and Haas used what has been called a “jagged windscreen” on their cars in the 2018 and 2019 U.S. Grand Prix races. Mercedes also used the jagged windscreen in the 2021 U.S. Grand Prix race.

99. Racing Point used a jagged windscreen in the 2019 U.S. Grand Prix race. Aston Martin, formerly Racing Point, used a jagged windscreen in the 2021 U.S. Grand Prix race.

100. Ferrari, Red Bull and Toro Rosso drivers used small windscreens on their cars in the 2018 and 2019 U.S. Grand Prix races. Ferrari and Red Bull also windscreens on their cars in the 2021 U.S. Grand Prix race.

101. Other teams and drivers also used small windscreens on their cars, or their equivalent, in the 2018, 2019 and 2021 events.

102. The U.S. Grand Prix has resulted in increased sponsorship for Formula One teams and organizations.

103. The U.S. Grand Prix operating results were a factor in establishing a 2022 Grand Prix race in the Miami area.

104. The U.S. Formula Grand Prix has been held at COTA since 2012, with the exception of 2020, when it was cancelled due to the COVID-19 pandemic.

105. The 2021 U.S. Grand Prix race was held on October 24, 2021, at COTA in Austin, Texas. All cars fielded by all teams and all drivers used a Halo fixed to their cars, including all drivers on the podium. It appears that at least nine of the ten teams, seventeen of the drivers and cars, used a Halo with a windscreen. This event had the highest attendance of any F1 race in 2021, with over 400,000 people attending the weekend's events. The U.S. Grand Prix had about 150% of the average Grand Prix broadcast audience for other Grand Prix races that year. Max Verstappen of Red Bull won this race, and Red Bull's Sergio Perez placed third, giving Red Bull the highest points earned from this race. Lewis Hamilton came in second place. All of the drivers on the podium used windscreens.

106. Since 2012, the U.S. Grand Prix has had an impact of billions of dollars on the local Austin area economy.

107. FOM has arranged for supply of components for the cars and their equipment after the 2018, 2019 and 2021 U.S. Grand Prix races to venues outside of the U.S. for races and events where the cars and equipment are assembled in a manner that would infringe if done in the United States.

108. FOM makes deals with local race promoters, and chooses the venues. FOM makes the calendar for Grand Prix races, which is then approved by the FIA. FOM, FOWC, FIA and the teams ~~that~~ caused cars in components and other equipment to be supplied after the 2018, 2019 and 2021 U.S. Grand Prix races to venues outside of the U.S. for races and events where the cars and equipment ~~are~~ were assembled in a manner that would infringe if done in the United States.

109. Spark Racing Technology was chosen to build all cars for Formula E for all teams. Spark contracted with Dallara to do the work on the chassis as well as other tasks for the cars. For the 2018-2019 Formula E Season, Spark sold the Spark Gen2 to Formula E teams. The Spark Gen2 has the Halo incorporated into it. For the 2020-2021 season, Spark is selling the Spark Gen2EVO, which likewise includes the Halo. Dallara contributed to the design of the vehicle chassis and the Halo for these vehicles.

110. The Halo was used at the U.S. Formula E ePrix in New York City in July 2019 and July 2021 by all cars as required by FIA.

111. FIA has set the schedule with Formula E Ltd. and the teams that caused cars and equipment to be supplied after the 2019 and 2021 U.S. Formula E ePrix to venues outside of the U.S. where the cars and equipment are assembled in a manner that would infringe if done in the United States.

112. All drivers in all cars wore helmets with visors.

113. All cars had windscreens as required by FIA's Formula E regulations.

114. The Halo has been used at Formula 3 events in the U.S. since at least 2019.

115. Drivers in Formula 3 events wear helmets with visors and the front ends of their cars slope down. FIA published rules for Formula 3 that required use of windscreens in the cockpit at all relevant times.

G. The Aeroscreen in IndyCar

116. IndyCar was working with other collaborators on its own safety project, as well as monitoring the Project through at least Dr. Trammell's participation in quarterly meetings with the FIA Institute that included discussion of additional frontal protection. IndyCar developed a shield cockpit protection device with PPG. Although this device supposedly overcame the vision and

other issues that a version of the Shield developed for the F1 Strategy Group suffered from, it ultimately was not strong enough to provide safety for the driver's head and neck according to the benchmarks used by IndyCar.

117. At some point in or around 2018, IndyCar went to RBT and asked it to collaborate on the IndyCar driver safety device. In May 2019, IndyCar and RBT held a joint press conference announcing the collaboration and upcoming testing of the device.

118. RBT and IndyCar included Dallara in the effort.

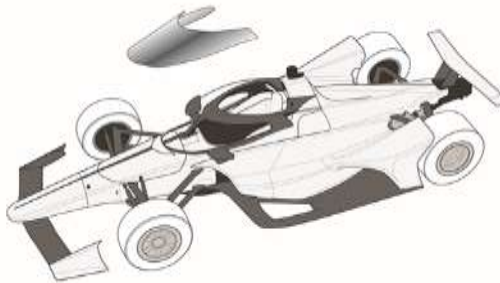
119. Dallara suggested the Halo be incorporated in the Aeroscreen for strength.

120. They redesigned IndyCar's Aeroscreen to incorporate the Halo.

121. Ultimately, RBT collaborated with Dallara as well as PPG and Pankl Racing Systems ("Pankl") and others to create the Aeroscreen. RBT designed the Aeroscreen. RBT participated in testing of the Aeroscreen in 2019 in the United States, including in Indiana, Virginia, Alabama and Florida.

122. It is significant that the original Aeroscreen design was not able to pass the FIA's 2017 strength tests, nor was IndyCar's shield, but again only the Halo provided the strength needed to protect drivers' heads and necks in collisions and from flying objects.

123. IndyCar adopted the Aeroscreen for use starting in the 2020 Circuits, starting with the NTT IndyCar 500 official practices at COTA and Texas Motor Speedway the week of February 10, 2020.



124. Above is a diagram of the Aeroscreen as completed for IndyCar racing circuits shown on a Dallara DW12 chassis.

125. Dallara made and also collected from other companies, Aeroscreen components at its facilities in Italy and rushed to import them into the U.S. so that they could be assembled and installed in preparation for testing in racing conditions at the NTT IndyCar 500 official practices the week of February 10, 2020, at COTA and Texas Motor Speedway. RBT's project manager, Andy Damerum, was involved in this event. RBT continued to work with the parts manufacturers to improve reliability and performance of parts for the Aeroscreen after this event.

126. The first, and as of the filing of the Original Complaint, only public, ticketed IndyCar event where all teams participated with the Aeroscreen was the 2020 NTT IndyCar Series Official Practice on February 11, 2020 at COTA. The Aeroscreen was used at subsequent closed practices later that week at COTA and Texas Motor Speedway, and since that time in multiple IndyCar practices and events since the 2020 opening race on June 6, 2020, at Texas Motor Speedway in Fort Worth.

127. There was a problem with water leaking into the cars during the February 11 test. In addition, there was a problem with heat building up in the cockpit behind the Aeroscreen. After these tests, RBT and Dallara worked on the Aeroscreen to improve it before it was deployed in competition.

128. Upon information and belief, Dallara made changes to the air ducts after studying the feedback from the Texas testing and/or the June 6, 2020, racing events at Texas Motor Speedway. RBT cooperated with IndyCar in publicity regarding the use of the Aeroscreen at the opening race.

129. IndyCar provided RBT and Dallara feedback on the performance of the Aeroscreen at the June 6, 2020, IndyCar racing events at Texas Motor Speedway.

130. Several IndyCar drivers have been spared death or serious injury due to the Aeroscreen in incidents in July 2020, August 2020, April 2021 and May 2021. Other drivers in F1, F2 and F3 have been saved death or serious injury due to the Halo.

II. THE PARTIES

A. FIA

131. FIA describes itself as “the governing body for world motor sport and the federation of the world’s leading motoring organisations.”⁶

132. It is a non-profit making association based in France.

133. It is a membership organization under French law.

134. FIA is the “governing body” for Formula 1, Formula E and F3 racing in the United States.

135. FIA is the sanctioning authority for the U.S. Grand Prix held at COTA in Dell Valle, Travis County, Texas, the U.S. ePrix on New York City roads, the F3 Americas circuit, and for the scheduled Miami Grand Prix, among other racing in this country.

⁶ FIA, *The FIA*, <http://www.fia.com/FIA> (last visited July 23, 2021).

B. FOM and FOWC

136. FOM and FOWC are indirect subsidiaries of Liberty Media.

137. These entities manage and commercialize Formula One Grand Prix racing, including the 2018, 2019 and 2021 U.S. Grand Prix events at COTA.

138. FOM has organized the Miami Grand Prix for 2022.

139. Upon information and belief, FOM and FOWC are among the successors in interest to the original Formula One company and Delta Topco, Ltd. (“Delta”), founded by Bernie Ecclestone to exploit media and other commercial aspects of Formula One Grand Prix racing.

140. Liberty Media and its affiliates organized FOM and FOWC after it purchased the Formula One entity effective January 2017 for about \$4.6 billion and other terms. This sale was approved by the FIA.

141. F1, FIA and then F1 teams (including Mercedes, Ferrari and RBR) have contracts among them that provide for governance of F1 Grand Prix racing and also allocate revenues among them. F1 pays the FIA for adopting, codifying and administering rules for Formula One, Formula 2 and European Formula 3 racing.

142. Among the contracts in effect during the 2018-2020 Seasons was the 2013 Concorde Agreement.

143. The 2013 Concorde Agreement was replaced by a 2020 Concorde Agreement, which substantially changed the governance of Formula One Racing.

144. FOM manages media for Formula One Grand Prix Racing.

145. Mr. Nygaard communicated with Formula One and Mr. Ecclestone (and through them, Delta Topco) regarding his intellectual property by 2006. Mr. Ecclestone participated in the Inaugural meeting of the F1 Strategy Committee, which was held at a Formula One Facility in

Biggin Hill, England in October 2013. The working papers for the meeting included a memorandum by Andy Mellor reporting on development of additional head protection for drivers, which discussed the Nygaard patent at length. The F1 Strategy Committee took up matters on additional head protection for drivers at this meeting. (Christian Horner, principal of RBR and CEO of RBT also attended this meeting and was provided a copy of Mr. Mellor's memorandum. The same is true for representatives of FIA, Ferrari and Mercedes, among others).

146. On October 17, 2018, Mr. Nygaard communicated with several Liberty Media and FOM executives about his patent rights seeking payment.

147. Chloe White, then an in-house attorney for FOM, replied to Mr. Nygaard on their behalf on October 25, 2018, and also had other communications with him in 2018.

148. Upon information and belief, Delta transferred its license and rights to commercialize Formula One Grand Prix racing to FOWC in or after January 10, 2017. Delta remains an indirect subsidiary of Liberty Media. FOWC and FOM are successors in interest to Formula One.

C. Mercedes⁷

149. Mercedes is the racing arm of Daimler. Mercedes was a member of the F1 Strategy Group that adopted the Halo in 2017 as a safety measure for Grand Prix racing. Mercedes actively worked on the Halo as part of the Project, and produced an early prototype for it. Mercedes competed in the 2018 and 2019 U.S. Grand Prix with cars implementing the Halo. Mercedes estimated in its most recent financial statement that it creates about \$5 billion in advertising and brand value for Daimler.

⁷ Mercedes was dismissed without prejudice in February 2021 pursuant to its opposed motion, so no changes have been made to sections of the complaint regarding Mercedes.

150. Mr. Paddy Lowe was executive director (technical) for Mercedes from about Spring of 2013 to 2017, during the time when the Halo was in development and Mercedes produced prototype Halos. In or around December 17, 2012, shortly before Mr. Lowe started at Mercedes, while he was finishing his time at McLaren, Mr. Lowe had an in-person meeting with Mr. Nygaard, Mr. Andy Mellor of the FIA Institute, and others to discuss his patent and BVT inventions with him.

151. Mercedes worked on the Halo in at least 2014-2017 with FIA and the FIA Institute.

152. Mercedes raced two cars in each of the 2018 and 2019 U.S. Grand Prix races with the Halo and “jagged windscreens.”

153. Mercedes’ two drivers placed in the points in the 2018 U.S. Grand Prix coming in third and fifth in the race. Mercedes’ two cars finished First (Valterri Bottas) and Second (Lewis Hamilton) in the 2019 race, and driver Lewis Hamilton clinched his sixth Driver’s Championship on points in the 2019 U.S. Grand Prix.

D. Daimler⁸

154. Daimler is the parent company of Mercedes. It is a German company that trades securities on the New York Stock Exchange. It is one of the largest corporations in the world, and is the controlling party for the Mercedes-Benz brand and companies.

155. Upon information and belief, Daimler controls Mercedes. Daimler has actively directed Mercedes business. It has heavily subsidized Mercedes through purchase of services and goods, and interest-free loans and other mechanisms. Daimler’s Chairman made the decisions on Mercedes drivers for 2020, and top Daimler executives are on the board of Mercedes.

⁸ Daimler was dismissed without prejudice in February 2021 pursuant to its opposed motion, so no changes have been made to sections of the complaint regarding Daimler.

- a) The contracts that governed F1 Grand Prix racing through 2020, expired at the end of 2020. There was substantial doubt up until Mercedes signed the 2020 Concorde Agreement, as to whether Mercedes would continue in F1. It was Daimler that made the decision that Mercedes would continue in Formula One Grand Prix Racing after 2020.
- b) Lewis Hamilton's contract with Mercedes expired in 2020. There were protracted negotiations into early 2021 as to his contract, which ultimately was renegotiated for a one year term for the 2021 season. Although there was speculation that Mercedes would discontinue its contract with its other driver, Valtteri Bottas. Daimler's Chairman and CEO announced in July 2020, that Mercedes Grand Prix Racing would stick with its current drivers, Mr. Bottas and Mr. Hamilton for the 2021 season.
- c) Mercedes generates over \$5 billion in advertising and brand building value for Daimler's brands.
- d) Mercedes was insolvent as of 2018, and its accountants only passed on issuing a "going concern" letter because its board assured them that Daimler would support interest-free, unsecured credit for Mercedes (worth about \$50-\$100,000,000). In its report for 2019, Daimler switched its purchases of services and goods from itself to its Mercedes-Benz AG subsidiary and continues to support interest-free, unsecured credit for Mercedes (again worth about \$50-\$100,000,000) to keep it as a going concern.
- e) Daimler put the Mercedes-Benz name into Formula E racing to promote Mercedes-Benz EQ electric car products. Daimler had Mercedes Formula E Ltd. created as a U.K. company for Formula E racing. High level Daimler executives serve on the board of Mercedes Formula E Ltd.

f) Daimler directly or indirectly contracted with HWA AG (“HWA”) to develop a Formula E car and establish a team for the Mercedes brand in 2018, “HWA Racelab.” Daimler then converted this team into Mercedes’ Formula E team for the 2019-2020 season, with HWA providing infrastructure, vehicles and support for the team. Daimler appointed two new principals for the Formula E team. This Formula E team shares the “EQ” branding Daimler has adopted for its electric vehicle development and is an important part of its strategy to promote its brand for electric vehicles. Mercedes’ Formula E is directly or indirectly funded by Daimler, and dependent upon Daimler to sustain itself as a going concern as shown by its December 2019 year-end financial statements. Until January 2021, Mercedes Formula E Ltd. had a majority of its directors from Daimler, and even today one-half are Daimler employees.

g) Mercedes is the agent or otherwise indistinct from Daimler for the purposes of Grand Prix and Formula E racing. Mercedes Formula E Ltd., has overlapping management with Daimler and is the agent or otherwise indistinct from Daimler for the purposes of Grand Prix and Formula E racing.

h) Mercedes Formula E Ltd. is only able to survive as a going concern because of financial support from Daimler.

156. Daimler corresponded with Mr. Nygaard regarding his patent in 2011. Daimler had Mr. Nygaard meet with engineers in Germany in 2015 regarding his patented safety inventions.

E. Hamilton⁹

157. Mr. Lewis Hamilton was the most successful driver currently active in Formula One racing from 2013-2020 with seven consecutive world-championships. For several years, Hamilton dominated the sport, but now faces stiff competition from Max Verstappen of Red Bull.

158. Hamilton is currently under contract to Mercedes through the end of the 2021 season.

159. He directly infringed the Patent-in-Suit by driving one of the infringing Mercedes vehicles in each of the 2018 and 2019 U.S. Grand Prix races in Austin, Texas in vehicles that implemented the Halo. He used a “jagged windscreen” in both races. Hamilton’s placement in the points in the U.S. Grand Prix in Austin, Texas in 2019 clinched his sixth driver’s crown win for the 2019 season, much to his benefit, and also that of Mercedes and Daimler. Hamilton is paid tens of millions of dollars by Mercedes each season.

F. Ferrari¹⁰

160. Ferrari is a manufacturer of high-end luxury sports cars, priced from the hundreds of thousands to over one million dollars.

161. Ferrari generates a substantial portion of its revenue by licensing its trademarks to other sellers of luxury goods.

162. Ferrari races in F1 Grand Prix events through its Scuderia Ferrari racing division, arranges for customer racing, and also operates the Ferrari Driver Academy to train Formula Circuit drivers. Ferrari has an extensive business licensing its trademarks. According to Ferrari’s

⁹ Hamilton was dismissed without prejudice in November 2020, pursuant to his opposed motion, so no changes have been made to sections of the complaint regarding Hamilton.

¹⁰ Ferrari was dismissed without prejudice in February 2021 pursuant to its opposed motion, so no changes have been made to sections of the complaint regarding Ferrari.

SEC Form F-20, Ferrari's image and brand depend on the past, present and future historical success of Scuderia Ferrari and its drivers.

163. Ferrari gained substantial benefit from the 2018 U.S. Grand Prix as one of its drivers won the race and another finished in the points (fifth place).

164. Ferrari gained substantial benefit from the 2019 U.S. Grand Prix as its driver Charles Leclerc finished fourth, placing in the points.

165. Ferrari was a member of the F1 Strategy Group, and upon information and belief had veto power over its decisions.

166. Ferrari was part of the F1 Strategy Group in 2017.

167. Ferrari was the first team to publically test the Halo in the spring of 2016 when it had an F1 car with the Halo drive laps in events around the Spanish Grand Prix.

168. Its Scuderia Ferrari team competed in the 2018 and 2019 U.S. Grand Prix with cars implementing the Halo. It is known that Leclerc raced in 2019 with a small windscreen. Other Ferrari drivers at these 2018 and 2019 events either used a small windscreen or other equivalent structure (including a helmet and visor, and a virtual windscreen as explained more fully below).

169. On June 7, 2019, Ferrari filed an information disclosure statement informing the U.S. Patent & Trademark Office (USPTO) the Nygaard patent pre-dated and was relevant to its own patent application for improvements to vehicle safety. (Obviously Ferrari had notice of Mr. Nygaard's patent at some point prior to its USPTO filing). Among other things, Ferrari's application appears to attempt to adapt and combine Nygaard's inventions for improved vehicle safety with its vehicles.

170. The EPO cited Nygaard as the only prior art reference to the center strengthening pillar in the Ferrari European Patent Application.

171. “Ferrari has patented a ‘a virtual windshield,’ which uses a panel ahead of the instrument pod to alter the air flow in an effort to maintain some interior comfort.”¹¹

172. McLaren, Williams, Dallara and other super sports car manufacturers have implemented virtual windscreens in their cars. A virtual windscreen is the equivalent of a windscreen.

173. Virtual windscreens are an outgrowth of Formula 1 technology.

G. Leclerc¹²

174. Charles Leclerc (“Leclerc”) drove a Ferrari vehicle with the Halo in the 2019 U.S. Prix and a small windscreen, finished fourth in that race, and is currently under contract to Ferrari.

175. Leclerc drove a vehicle with the Halo for Alfa Romeo Sauber F1, an Austrian team, in the 2018 U.S. Grand Prix.

176. Leclerc is an emerging star in Grand Prix racing, his 2019 contract with Ferrari was a multi-million dollar deal and he has endorsements or similar deals with Giorgio Armani and Twitch.

177. On information and belief, Leclerc was the first Formula One driver to have been saved from death or serious injury by the Halo (in the 2018 Belgian Grand Prix).

178. Leclerc was also saved by the Halo from injuries in the 2020 Italian Grand Prix where he drove into a safety barrier at or near racing speed, resulting in a “big crash,” with material falling over his Halo.

¹¹ J. Barlow, *Ferrari Monza SP1: The Inside Story on Ferrari’s Wild New Ride*, U.K. GQ MAG. (Sept. 19, 2018), <http://www.gq-magazine.co.uk/article/ferrari-monza-sp1-the-inside-story-on-ferraris-wild-new-ride>.

¹² Leclerc was dismissed without prejudice in November 2020 pursuant to its opposed motion, so no changes have been made to sections of the complaint regarding Leclerc.

H. RBT

179. RBT is a technology company for the automobile industry and also owns and operates RBR. Mr. Dietrich Mateschitz is shown by U.K. Companies House to own more than 25% (but less than 50%) of RBT. Mr. Mateschitz is the co-founder of Red Bull GmbH, he owns 49% of that company, is a multi-billionaire and is listed by Forbes as one of the 50 richest people in the world. Mr. Mateschitz and Mr. Horner are both directors of RBR. Mr. Horner is the principal of RBR. Mr. Horner is also the CEO of RBT and also a director of RBT.

180. RBT developed the original Aeroscreen during the process when Formula One and FIA were looking for solutions for protection for drivers' heads and necks in or about 2015-2016.

181. In 2019, RBT developed the Aeroscreen for IndyCar Circuits with IndyCar LLC and Dallara, among others. During this process, RBT participated in testing the Aeroscreen on IndyCar race cars in the United States in 2019.

182. RBT had a representative at the NTT IndyCar 500 Official Practice in Austin, Texas in February 2020, Andy Damerum.

I. RBR

183. RBR is a Formula One racing company and team owned by RBT and managed by the same principals.

184. RBR was part of the F1 Strategy Group that participated in the Inaugural meeting at Biggin Hill, England in October 2013 (Christian Horner), voted in April 2016 to delay the Halo and look for alternatives, and participated in the July 2017 unanimous vote of the F1 Strategy Group to adopt the Halo for Formula One racing.

185. Shortly after the April 2016 F1 Strategy Group meeting, RBR demonstrated the Aeroscreen on an F1 car in events around the 2016 Russian Grand Prix.

186. RBR competed in the 2018, 2019 and 2021 U.S. Grand Prix races in cars with Halos and small windscreens.

187. RBR got substantial benefit from the 2018 U.S. Grand Prix because its driver, Max Verstappen, finished second, gaining the team points.

188. RBR got substantial benefit from the 2019 U.S. Grand Prix because its driver, Max Verstappen, finished third, gaining the team points.

189. RBR received substantial benefit from the 2021 U.S. Grand Prix because its driver, Max Verstappen, won that race, and its other driver, Sergio Perez, placed third. Both Red Bull drivers used cars with windscreens in this race. Max Verstappen's win at COTA was essential to his later win of the 2021 driver championship.

190. Since 2006, RBR has had a "sister team" owned indirectly by Red Bull GmbH.

191. RBR's sister team, or sometimes called its "junior team," has raced in the 2020 and 2021 seasons as Scuderia AlphaTauri,¹³ and was formerly called Scuderia Toro Rosso. This team participated in the 2018, 2019 and 2021 U.S. Grand Prix races.

192. AlphaTauri (formerly Toro Rosso) drivers are under contract to RBR.

193. RBR drivers used small windscreens in the 2018, 2019 and 2021 U.S. Grand Prix races.

194. Toro Rosso drivers used small windscreens in the 2018, 2019 and 2021 U.S. Grand Prix races.

195. RBR and Toro Rosso drivers used helmets in 2018, 2019 and 2021 U.S. Grand Prix racing.

¹³ Scuderia AlphaTauri S.p.A. is an Italian Company that has an establishment in the U.K., it is the successor to Scuderia Toro Rosso, and raced under that name from 2006-2019.

196. RBR and Torro Rosso 2018 and 2019 Formula 1 cars had front ends that slope down and create a virtual windscreen.

197. RBT and RBR joined forces with Aston Martin for F1 Grand Prix racing for the 2018 season. Aston Martin is not merely a sponsor of RBR, but RBT and RBR engineers have actively collaborated on Aston Martin vehicle engineering. Mr. Nygaard made presentations about the '178 patent to Aston Martin.

198. In 2019 and 2020, RBT worked with IndyCar and Dallara to reconfigure the Aeroscreen for IndyCar, participated in testing of the Aeroscreen in 2019 in the United States, and publicized the project in a press conference with IndyCar in May 2019.

199. After this lawsuit was filed, the complaint was sent with the patent to the U.S. legal department of Red Bull.

200. After this lawsuit was filed, RBT and RBR hired outside counsel for this lawsuit.

201. RBR and RBT received notice of the "Nygaard Patent" in October 2013 through RBR's, and specifically Christian Horner's, participation in the F1 Strategy Committee. RBR and RBT also received notice of the '178 patent after they were sued in this lawsuit.

202. Both Dallara (Luca Pignacca) and IndyCar (Dr. Trammell) knew about the Nygaard patent from their participation in the FIA Institute's work on development of additional frontal protection for drivers.

203. RBT and Dallara worked with IndyCar to improve the Aeroscreen in and after July 2020. RBT participated in efforts to publicize the Aeroscreen in regard to the June 6, 2020, opening IndyCar race and in relation to other events.

J. Dallara¹⁴

204. Dallara is an Italian manufacturer and assembler of automobile chassis, upgrade and safety kits, as well as parts, for motor sports, including Formula 1, Formula E, Formula 3, and IndyCar Circuits, among others, including Haas F1 Racing.

205. Dallara is the exclusive supplier of chassis to IndyCar Circuit teams.

206. Dallara is the exclusive Aerokit supplier to IndyCar Circuit teams.

207. Dallara tested its Aerokit at Texas Motor Speedway in Fort Worth in 2017.

208. Dallara tested its Aerokit at COTA in 2017.

209. Every IndyCar that competed in 2020 had an Aeroscreen assembled from components sent from Dallara's Italian facility to the U.S., with chassis supplied by Dallara, and AeroKits supplied by Dallara.

210. According to Dallara's website, "To ensure the success of the IndyCar program, Dallara always has a team of engineers on track to assist all of the teams in the series."¹⁵ According to Dallara's website, as translated from Italian, "The championship is the only one in the world characterized by a great variety of circuits: Superspeedway (oval circuits from 1.5 to 2.5 miles like Pocono, Texas and Fontana)"¹⁶

211. Dallara collaborates with Haas on its F1 Grand Prix vehicles and racing program.

212. Dallara has shipped parts to Haas at COTA for the 2018 U.S. Grand Prix.

213. Dallara engineering (Luca Pignacca) met with Mr. Nygaard on or about March 27, 2013, at FIA headquarters in Paris as part of the project that resulted in the Halo being chosen by

¹⁴ Dallara was dismissed without prejudice in July 2021 pursuant to its opposed motion, so no changes have been made to sections of the complaint regarding Dallara.

¹⁵ DALLARA, <http://dallara.it/en/dallara-usa/racing> (last visited July 22, 2021).

¹⁶ DALLARA, <http://dallara.it/it/racing/indycar> (last visited July 21, 2021).

FIA for driver safety in July 2017. Mr. Pignacca had a copy of Mr. Nygaard's EPO patent application at the March 27, 2013, meeting and discussed Mr. Nygaard's patent with him at the meeting. Mr. Pignacca was also sent a copy of the counterpart application for Mr. Nygaard's 2009 U.S. patent by Mr. Andy Mellor after the meeting. Mr. Pignacca, then and now, was Chief Designer for Dallara.

214. Dallara makes and supplies Aeroscreen components for U.S. IndyCar teams, including for their use in racing at COTA and Texas Motor Speedway.

215. Dallara makes certain custom components of the Aeroscreen, which have no substantial non-infringing use other than in the Aeroscreen.

216. Dallara ships from Italy to the U.S. components of the Aeroscreen which have no substantial non-infringing use other than in Aeroscreen.

217. The Aeroscreen has a windshield.

218. Dallara packages the Aeroscreen components.

219. Dallara ships to the U.S. the component of the Aeroscreen made by Pankl in Austria. This component is the equivalent of the Formula One Halo.

220. The Aeroscreen (which includes the Halo) is shipped to the U.S. for implementation in cars competing in IndyCar Circuits, including racing at COTA and Texas Motor Speedway in Fort Worth, Texas.

221. Dallara also collaborated on Haas' F1 Grand Prix cars outfitted with the Halo in 2018 and 2019 for competition in Grand Prix racing, including the U.S. Grand Prix races at COTA. Haas is the only U.S.-based team in F1, and the U.S. Grand Prix at COTA is its "home race."

222. Haas used the "jagged windscreen" in the 2018 and 2019 U.S. Grand Prix races (and/or helmets and/or virtual windscreens).

III. THE PATENT-IN-SUIT

223. On March 29, 2004, Mr. Nygaard's original patent application for his inventions for vehicle safety was filed in Great Britain. The U.S. '178 patent issued in 2009. Among other things, Mr. Nygaard's inventions protect people from accidents caused by collisions, flying objects, and rollovers.

224. Mr. Nygaard's patent includes inventions for placement of a strengthening member in front of the driver in his line of sight without impairing the driver's vision, by adapting the structure to achieve BVT, which effectively edits out the obstruction from the driver's line of sight.

225. The original application, subsequent filings in the USPTO, filings in other jurisdictions, and the issued '178 patent itself, included drawings that illustrated many examples of embodiments of Mr. Nygaard's inventions, including cars with what Defendants now refer to as the Halo. The Aeroscreen is a windscreen and frame combined with the Halo.

226. Shown below from left to right are figures 64 and 68 from the '178 patent, a depiction from FIA regulations of the Halo, and the Halo of the car driven by Leclerc in the 2018 Belgium Grand Prix. The marks on the Halo of Leclerc's car were caused by the tire of another F1 car that launched into the air in a multi-car accident during the race. The Halo received worldwide praise for saving Leclerc's life.



227. Mr. Nygaard contacted manufacturers, government regulators, FIA, Delta, Formula One and others in the automobile industry to improve safety with his patent pending inventions. He reached out to the FIA by 2005 to improve safety in motor sports. Over the following years, he discussed his inventions and consulted with major car manufacturers, including, among others,

Aston Martin, Audi, Bentley, Daimler, Jaguar, Lotus, Magna Steyr, Nissan, Rolls-Royce and Volvo, as well as consultants, government and others in the automobile industry. Among others, Mr. Nygaard met with Daimler Group's engineers in Stuttgart, Germany to discuss his patented inventions.

228. Mr. Nygaard directly contacted Mr. Ecclestone of Delta and Formula One in 2006 about his patent applications to bring his safety inventions to Formula One Grand Prix events. Mr. Nygaard wrote to Max Mosley, then president of FIA in 2005. Mr. Nygaard also met with auto manufacturers and consultants at or around the annual Geneva, Switzerland Auto Shows.

229. As discussed above, after Mr. Surtees' untimely death and Mr. Massa's injury, the FIA Institute focused on finding a solution for protection of the heads and necks of drivers in FIA administered Formula motor sports, which became the Project.

230. As explained above, having failed in its attempts to find a suitable safety device, FIA and/or the FIA Institute met in November 2012 with Mr. Nygaard to consult on the BVT and driver safety innovations in his '178 patent. On December 17, 2012, FIA, Mr. Paddy Lowe and Mr. Nygaard and others met at McLaren in Woking, England, regarding his safety inventions and BVT technology. On March 27, 2013, Mr. Nygaard met with Dallara, and the FIA Institute at FIA's Paris Headquarters to implement his inventions for Formula racing. Mr. Nygaard discussed his patent at least at the March 27, 2013 meeting.

231. Prior to meeting Mr. Nygaard and studying his '178 patent, FIA, Dallara, and others in open cockpit racing, did not believe that an obstruction could be safely placed ahead of the driver in his field of vision. Mr. Pignacca had criticized the idea of placing an obstruction in front of the driver in an open cockpit car because it would interfere with the driver's line of sight.

232. Mr. Nygaard's '178 patent and Mr. Nygaard taught FIA, Dallara, and others about his inventions to exploit BVT to place a strengthening pillar in front of the driver in an open cockpit race car. In preparation for the October 2013 F1 Strategy Committee meeting at Formula One's Biggin Hill facility, Andy Mellor of the FIA Institute wrote a memorandum reporting on additional frontal protection for drivers, which included discussion of the Nygaard patent. This memorandum was distributed to F1 Strategy Committee members as part of the working papers of the meeting, and all three remaining Defendants have now produced their copies of it. Additional frontal protection for drivers was taken up at this meeting.

IV. MR. NYGAARD REQUESTED COMPENSATION AFTER THE HALO WAS IMPLEMENTED

233. As explained above, Mr. Nygaard was removed from the development of the Halo after he refused to give away his patent rights as demanded by FIA.

234. Nonetheless, Mr. Nygaard's patented inventions were implemented in Formula 1 Grand Prix races in 2018.

235. By October 17, 2018, Mr. Nygaard directly contacted top executives at Liberty Media and FOM about licensing his patent to compensate him for its use in the Halo and cars implementing the Halo.

236. FOM insisted in its replies to Mr. Nygaard that the Halo was an FIA issue, and he should contact the FIA.

237. Mr. Nygaard then turned to the FIA after his communications with FOM and FOWC about the '178 patent.

238. Mr. Nygaard once again asked for a royalty-bearing license as he had in 2013. This time, however, the Halo was proven technology that saved at least two driver's lives in 2018 in Formula racing (Tadasuke Makino and Charles Leclerc).

239. Ultimately, Jean-Baptiste Pinton responded for the FIA in March 2019 with an email, and copied multiple people on his response, including those previously contacted in October by Mr. Nygaard at FOM and/or FOWC.

240. After being rejected by Mr. Pinton, Mr. Nygaard appealed to FIA's Mr. Jean Todt to reconsider Mr. Pinton's decision, and corresponded back and forth with Mr. Todt in 2019 about licensing his patents.

241. Even though Mr. Nygaard again asked FOM in 2018 and FIA in 2019 to compensate him for his patent rights, they flatly refused to do so. Neither of them made an offer to license. Neither F1, FOWC, Mercedes, Daimler, Ferrari, Dallara nor others sought a license, even though they knew the Halo would be deployed as implemented in cars in the U.S. Grand Prix at COTA, the U.S. ePrix on New York City roads, by F1's U.S.-based F1 team (Haas Racing), and by BMW Andretti and Geox Dragon Formula E teams based in the U.S., among other times and places in this country.

242. They also knew that many F1 Grand Prix vehicles with the Halo would be supplied from the U.S. abroad as disassembled into their custom components that make up all or substantial all of the invention including the vehicle chassis with the Halo, including those which have no substantial non-infringing use, other than for assembly into the invention.

243. FIA and Daimler also knew that Formula E teams would ship their Spark Gen2 cars with the Halo disassembled so that the vehicle chassis implementing the Halo is a custom component, together with other components that if assembled in the U.S. would infringe the patent.

V. THE HALO ENABLES IMPROVEMENTS TO F1 GRAND PRIX RACING FOR 2022

244. FOM and FOWC and others had concerns that Formula One Grand Prix racing was becoming less attractive to fans due to the lack of competition, with racing being dominated by Mercedes and RBR.

245. There was a press in the Formula One Grand Prix stakeholders to change rules to make racing more competitive by design changes to cars that would permit them to be driven closer to each other, have more opportunities to overtake each other, and put more emphasis on driver skill than with the current cars.

246. FIA adopted new regulations for construction of Formula One cars in February 2021 for the 2022 season based on research and development work done by FOM and FOWC to implement the goal of more competitive racing. The nature of enhancing and emphasizing competition based on drivers' skill was made possible by the greater safety provided to drivers by the Halo.

VI. NATURE OF THE ACTION

247. All Defendants have been served or accepted service, and appeared.

248. Defendants Mercedes, Ferrari, Hamilton and Leclerc were dismissed without prejudice based on the customer-suit exception, and Plaintiff has the right to proceed directly against each of them in the future if appropriate.

249. Dallara was dismissed from this case for lack of personal jurisdiction on July 16, 2021. Plaintiff has moved for reconsideration of that order.

250. This is a case for direct and indirect patent infringement, literally or under the doctrine of equivalents, against each of the Defendants of claims 1, 2, and 4 of U.S. Patent No.

7,494,178, titled “Vehicle And a Strengthening Member For a Vehicle,” pursuant to Title 35 United States Code, Section 271(a)-(c) & (f)(1), (f)(2).

251. The patent issued on February 24, 2009. Mr. Nygaard has always been the owner of all right, title, and interest in and to the '178 patent. This is an exceptional case as to Defendants FIA, FOM, FOWC, Mercedes, Daimler, Ferrari, and Dallara because they had notice prior to suit of the patent and infringed without regard for Mr. Nygaard's rights. RBT had notice of the patent no later than October 2013, but designed the Aeroscreen with a Halo in 2019 and participated in testing of it and promotion of it in the U.S. in 2019, willfully inducing infringement by each IndyCar team and driver during the 2020 and 2021 racing seasons from the opening race on June 6, 2020, to the end of the season. Upon information and belief, RBT continues to promote the Aeroscreen in, among other things, IndyCar racing and is poised to do so in the 2024² season, making its post-suit conduct not only willful but also rendering it an exceptional case. RBR and drivers under contract to RBR participated in the 2021 U.S. Grand Prix, all of its drivers used cars with Halos and windscreens.

252. This is also an action for a Declaratory Judgment pursuant to Title 35, Sections 2201 and 2202, of the United States Code.

253. Mr. Nygaard asks for a declaration that a Halo built in accordance with the FIA's 2022 regulations, and implemented on a Formula 1 car as shown by FOM's model and videos in July 2021, if raced in events as planned in the Miami and Austin areas in 2022, in configurations with windscreens, would directly infringe the '178 patent, and FOM's, FWOC's and FIA's conduct would be inducement to infringe. FOM, FOWC and FIA will also be liable for infringement of Section 271(f)(1) and (f)(2) when the cars and equipment are supplied to venues outside of the U.S. after those events.

254. Mr. Nygaard also asks for a declaration that such infringement would be willful.

VII. JURISDICTION AND VENUE

255. This action arises under the patent laws of the United States, Title 35 of the United States Code (“U.S.C.”) § 101 *et seq.*

256. This Court has subject matter jurisdiction over this action under 28 U.S.C. §§ 1331 and 1338(a).

257. This Court has personal jurisdiction over each Defendant under the Texas Long-Arm Statute, Tex. Civ. Prac. & Rem. Code §§ 17.041 *et seq.* because each of them has infringed the patent directly and/or indirectly in the State of Texas, and Fed. R. Civ. P. 4. Only Dallara and Charles Leclerc contested personal jurisdiction. Leclerc was dismissed under the customer exception and so this is a moot issue as to him. Dallara contested personal jurisdiction and was dismissed for lack of personal jurisdiction on July 16, 2021. Based on the facts herein and as shown in Plaintiff’s Response, Sur-Reply, additional evidence, and Motion for Reconsideration, and the record, the Court has personal jurisdiction over Dallara.

258. Venue is proper in this judicial district under 28 U.S.C. §§ 1391(c), 1400(b), because Defendants are not citizens of the United States and may be sued in any judicial district or any judicial district where they are subject to personal jurisdiction. No Defendant challenged or sought to transfer venue.

VIII. JOINDER

259. None of the Defendants have objected to joinder.

260. The Defendants were properly joined in this action under Section 299 of Title 35, because Mr. Nygaard’s claims result from their overlapping development of products that make-up or include the Halo and also uses of the Halo at COTA in Austin, Texas. Mr. Nygaard’s claims

are based on common and/or overlapping facts showing Defendants directly or indirectly infringed claims 1, 2 and 4 in regard to preparations for, events at, and acts following, the 2018, 2019 and 2021 U.S. Grand Prix; the 2019 and 2021 U.S. ePrix; the 2020 NTT IndyCar Practice at COTA and Texas Motor Speedway, and races in 2020 in Texas and elsewhere; and other times and places in this Country as alleged herein.

261. FOM, FOWC, RBT, RBR, Ferrari, Dallara, Mercedes and Daimler all contend they were all implementing FIA regulations in making and using the Halo.

262. Mr. Nygaard's right to relief is asserted against each Defendant acting together with multiple other Defendants, who infringed or induced infringement, or in the alternative, with respect to or arising out of the same transaction, occurrence, or series of transactions or occurrences relating to the making, using, selling, offering for sale, or importing into the U.S. the patented invention, as well as causing to be supplied from the U.S. components, including those that have no substantial non-infringing use, and would infringe if assembled in the U.S., and inducing others to do so.

- a) There are questions of fact common to all Defendants including at least:
 - i. Whether vehicles that implement the Halo or the Aeroscreen based on the Halo infringe claims 1, 2 and 4 of the '178 patent, literally or under doctrine of equivalents?
 - ii. Whether the components exported from the U.S. by each F1 team from COTA abroad for other Grand Prix races constitute all or substantially all of the invention in claim 4 if they had been assembled in the U.S.?

- iii. Whether components of the invention with no substantial non-infringing use which were exported from COTA abroad for other Grand Prix races would infringe claim 4 if assembled in the U.S.?
- iv. Whether the Halo prevented substantial injuries to, or death of, Charles Leclerc at the 2018 Belgian Grand Prix, and other drivers in Formula racing in 2018 and 2019?
- v. Whether the Aeroscreen saved drivers in the NTT Indy500 Circuit races in Iowa in 2020, and Alabama and Texas in 2021, from death or injury?
- vi. Whether and to what extent RBR, RBT, Dallara, IndyCar, FOM, FIA, Ferrari, Delta, Mercedes, Daimler and others shared information regarding the Halo, including, but not limited to, information about Mr. Nygaard and/or his patent?
- vii. Dallara's, Mercedes', FIA's, RBT's, RBR's, Ferrari's and Mr. Nygaard's roles in developing the original Halo prototype, other work on the Halo and the Aeroscreen, as well as the 2019-2020 RBT Aeroscreen kits for IndyCar, and other work on parts and equipment to adapt Dallara chassis for IndyCar and for Formula E, and Formula 3 to meet the strength requirements for both IndyCar and FIA.
- viii. Whether and when FOWC, FOM and teams learned of Mr. Nygaard's patent and also licensing offers to FIA in 2013 and/or 2018?
- ix. Whether FIA, FOM, FOWC, Mercedes, Daimler, Ferrari, RBT, RBR, and Dallara willfully infringed Mr. Nygaard's patent rights at Formula Grand Prix events at COTA, Formula E, Formula 3 and 4 events, and the NTT IndyCar Series Official Practice at COTA, and other places in the United States,

knowing before those events about the '178 patent, their direct or indirect infringement, literally or by doctrine of equivalents, and that they were not licensed?

- x. Whether the greater protection provided by the Halo was necessary to permit for changes in the February 2021 Formula One rules for 2022?
- xi. Whether, and if so how, the revenues and other financial terms of the contracts among RBT, Dallara, their IndyCar customers and others, evidence Defendants' actions, intent, motivations, willfulness and damages owed to Mr. Nygaard?
- xii. Whether FIA's, FOM's, FOWC's, RBT's, RBR's, Mercedes', Daimler's, Ferrari's and Dallara's participation in, and/or monitoring of, the Project put them on notice of the '178 patent?
- xiii. Whether FIA's, FOM's, FOWC's, RBT/RBR's, Mercedes' and Ferrari's involvement in the F1 Strategy Group put them on notice of Mr. Nygaard's patent (including, but not limited to, the October 2013 memorandum by Mr. Mellor included in the working papers for the Inaugural F1 Strategy Committee meeting)?
- xiv. Whether and how facts about the design, modification and costs of infringing open cockpit vehicles built for use in Formula 1, Formula E, and other Formula racing activities in the U.S. by car owners and by drivers during races and related events evidence infringement, willfulness and damages in this case?
- xv. Whether Defendants' contacts with Dallara for designing and making components to install and upgrade chassis for the Halo for Formula Events or

the Aeroscreen in IndyCar events, and afterward in one or more of the 2018 and 2019 U.S. Grand Prix races at COTA, the 2020 NTT IndyCar Series Official Practices at COTA and Texas Motor Speedway, the 2020 opening NTT Indy500 Race in Texas and later races, or 2019 Formula E ePrix on New York roads, or making or using the invention by Haas Racing in the U.S., or Formula E teams in the U.S. (including Mercedes' Formula E team), or Formula 3 and 4 teams, constitute direct or indirect infringement of the '178 patent, literally or by doctrine of equivalents?

- xvi. Whether and when RBR and RBT obtained knowledge of the Ferrari patent applications regarding a design like the Halo deployed in a Ferrari sports car, which was published in 2019?
- xvii. Whether the media and social media strategy to grow Formula 1 Grand Prix Racing in the U.S. was enabled or otherwise benefited from the inventions?

COUNT I

Infringement of the '178 patent by FIA

263. Mr. Nygaard incorporates by reference each and every allegation in the preceding paragraphs.

264. Mr. Nygaard incorporates Exhibits A and B herein.

265. FIA has induced infringement of the '178 patent claims 1, 2, and 4 literally or alternatively by equivalents in regard to vehicles implementing the Halo, and infringed claim 4 literally or by equivalents under Section 271(f). All allegations of infringement against FIA include literal infringement or alternatively, infringement under the doctrine of equivalents, under the Court's March 22, 2021 claim construction.

266. The elements of claim 1 of the '178 patent below, with limitations bold and underlined, are met literally or by doctrine of equivalents **by the Halo**, as shown below by the matters described in the bracketed material, see Exhibits A (the '178 patent) and B (charts illustrating the application of the claims):

A strengthening member [the Halo] **for use in a road vehicle** [open cockpit race car], **for fixing to a structure of the vehicle, and for extending in front of the driver's position** [the vertical member (central pillar) of the Halo is fixed to the car at a point in front of the cockpit within the claim construction literally or by equivalents], **the strengthening member being dimensioned so that, when in use, the strengthening member will not prevent the driver from seeing an object which is at least 2 m from the front windscreen,** [Formula One drivers and teams used windscreens. If the small windscreens are not windshields as in the claim construction order, then for the purposes of the asserted claims they satisfy the limitation of a windshield as they deflect wind and provide a dimensional point of reference. If a car lacked any physical windscreen of any kind, then the visor on the front of the drivers' helmets are the equivalent of a windshield. Alternatively, the air flow configuration (e.g., nose and FIA rules on dimensions of cockpit) for Formula One cars is the equivalent of a windscreen. These alternative equivalents all function in the same way in terms of fixing orientation of the strengthening member so that the driver can see objects, e.g., other cars, at this distance when the Halo is implemented on the vehicle. They also function in the same way as they are all placing the center pillar ahead of the driver in his field of vision with only minimal, if any, obstruction, so that binocular vision will edit out the obstruction]

when the driver uses binocular vision [the driver uses binocular vision, e.g., drivers report that the vertical member of the Halo that extends in the front of the cockpit does not interfere with their vision when driving] and **without requiring the driver to move the driver's head** [the driver does not need to move his or her head to see objects when driving, e.g., other cars in front while driving or its equivalent], wherein the strengthening member has the form of a triangular prism which has been sheared in a vertical plane or **the form of a truncated sheared triangular pyramid** [the Halo has the form of a truncated sheared triangular pyramid as formed by its angled vertical member in conjunction with the other angled portion or its equivalent].

267. Claim 2 of the '178 patent is infringed literally or by doctrine of equivalents by **the Halo**, *see* Exhibits A and B:

A **strengthening member** [the Halo] for mounting in a vehicle [open cockpit race car], **formed of at least three first linearly extending structural units placed in a triangular arrangement, for extending from the front structure of the vehicle** [an end of each of the three first linearly extending structural units extends from the front structure of the vehicle] and **second linearly extending structural unit joining the at least three first linearly extending units** [portion of the Halo extending around the cockpit], the second linearly extending structural unit being not horizontal [slanted], and **wherein the first linearly extending structural units of the strengthening member have a width not exceeding 65 mm** [central pillar width of the Halo equals to or is less than 65mm], **the strengthening member having a connection for fixing the strengthening member to the vehicle** [the

Halo is fixed to the vehicle by at least one connection], whereby, **when mounted in the vehicle, the strengthening member extends obliquely to the vertical direction of the vehicle** [all angles on the Halo are oblique to (slanted with respect to) the vertical direction of the vehicle].

268. Claim 4 of the '178 patent is infringed literally or by doctrine of equivalents **by vehicles incorporating the Halo**, *see* Exhibits A and B:

A road vehicle [open cockpit race car] **comprising at least one strengthening member** [the Halo] **fixed to a structure of the vehicle** [the vertical member of the Halo is fixed to the front of the automobile chassis] and **extending in front of the driver's position** [the vertical member (central pillar) of the Halo is fixed to the car at a point in front of the cockpit within the claim construction literally or by equivalents], **wherein the strengthening member is dimensioned so that the strengthening member will not prevent the driver from seeing an object which is at least two meters from the front windscreen** [Formula One drivers and teams used windscreens. If the small windscreens are not windshields as in the claim construction order, then for the purposes of the asserted claims they satisfy the limitation of a windshield as they deflect wind and provide a dimensional point of reference. If a car lacked any physical windscreen of any kind, then the visor on the front of the drivers' helmets are the equivalent of a windshield. Alternatively, the air flow configuration (e.g., nose and FIA rules on dimensions of cockpit) for Formula One cars is the equivalent of a windscreen. These alternative equivalents all function in the same way in terms of fixing orientation of the strengthening member so that the driver can see objects, e.g., other cars, at this distance when the

Halo is implemented on the vehicle. They also function in the same way as they are all placing the center pillar ahead of the driver in his field of vision with only minimal, if any, obstruction, so that binocular vision will edit out the obstruction], **when the driver uses binocular vision** [the driver uses binocular vision, e.g., drivers report that the vertical member of the Halo that extends in the front of the cockpit does not interfere with their vision when driving] and **without requiring the driver to move the driver's head** [the driver does not need to move his or her head to see objects when driving, e.g., other cars in front while driving or its equivalent], wherein the strengthening member has the form of a triangular prism which has been sheared in a vertical plane **or a truncated sheared triangular pyramid** [the Halo has the form of a truncated sheared triangular pyramid as formed by its angled vertical member in conjunction with the other angled portion or its equivalent].

269. Defendant FIA knew of the '178 patent as early as 2005 from correspondence to Mr. Max Mosley from Plaintiff regarding his applications. FIA knew no later than 2013 of the '178 patent, through Mr. Nygaard's direct involvement in the design of the Halo and his request that FIA license the '178 patent. It also knew that the design of the Halo was based on Mr. Nygaard's '178 patent or would nonetheless infringe it from their meetings and subsequent communications with him.

270. Defendant FIA induced infringement of claims 1, 2, and 4 of the '178 patent in violation of Section 271(b) by participating in the F1 Strategy Group's adoption of the Halo requirement for all F1 vehicles used in Grand Prix races, and later implementing rules requiring the Halo, which resulted in direct infringement by each of the ten teams making and using the

inventions in claims 1, 2 and 4, and twenty drivers using the invention in claim 4 by participating in the U.S. Grand Prix events at COTA from October 19-21, 2018, November 1-3, 2019, and October 21-24, 2021, because the vehicles incorporated the Halo.

271. Defendant FIA also induced direct infringement of claims 1, 2, and 4 of the '178 patent in 2018, 2019 and 2021 by causing all ten teams to have imported their F1 vehicles with the Halo into the U.S. for the 2018, 2019 and 2021 U.S. Grand Prix.

272. Defendant FIA also infringed claim 4 of the '178 patent in 2018, 2019 and 2021 by causing all ten teams to have supplied the chassis of their F1 vehicles with the Halo and other components for assembly outside of the U.S. in a manner that actively induced the combination of such substantial portion of components outside the United States and in a manner that would infringe if combined in the U.S. in violation of Section 271(f)(1). Further, or in the alternative, causing to be supplied abroad the vehicles' chassis with the Halo as custom components that were especially made and especially adapted for use in the patented '178 inventions and not a staple article or commodity of commerce suitable for substantial non-infringing use, where such components were uncombined in whole or in part. Upon information and belief, FIA knew that the customized components were especially made and especially adapted for use in the patented '178 inventions, and intended that such components would be combined outside of the United States in a manner that would infringe the '178 patent if such combination occurred within the United States in violation of Section 271(f)(2):

- a) After the 2018 and 2021 U.S. Grand Prix to Mexico for the Mexican Grand Prix.
- b) After the 2019 U.S. Grand Prix to Brazil for the Brazilian Grand Prix.

273. Defendant FIA induced the Haas racing team to directly infringe, directly or by equivalents, claims 1, 2, and 4 of the '178 patent by making and using vehicles with the Halo in and around Haas' facilities in the U.S. after the 2018 U.S. Grand Prix.

274. Defendant FIA also caused Haas F1 team's cars to be supplied from the U.S. a substantial portion of the components of the patented inventions, including vehicle chassis with the Halo in claim 4, abroad for assembly into vehicles with the Halo in a manner that actively induced the combination of such components outside the United States and in a manner that would infringe, literally or by equivalents, if combined in the U.S., for use in Grand Prix events outside of the U.S. in 2018, 2019, and 2021 in violation of Section 271(f)(1). Alternatively, or in addition, FIA caused to be supplied from the U.S. custom components [vehicle chassis with the Halo] that were especially made and especially adapted for use in the patented '178 inventions and not a staple article or commodity of commerce suitable for substantial non-infringing use, where such components were uncombined in whole or in part. Upon information and belief, FIA knew that the customized components were especially made and especially adapted for use in the patented '178 inventions, and intended that such components would be combined outside of the United States in a manner that would infringe the '178 patent if such combination occurred within the United States, for the 2018, 2019 and 2021 Grand Prix events in violation of 271(f)(2).

275. Defendant FIA further induced direct infringement, literally or by equivalents, of claims 1, 2, and 4 by teams and drivers having used cars in the 2019 and 2021 U.S. ePrix events in New York City events that implemented the Halo literally and by equivalents. *See Exhibits A & B.*

276. Defendant FIA also induced direct infringement, literally or by equivalents, of claims 1, 2, and 4 by all Formula E teams by requiring them to import their vehicles implementing the Halo following the 2019 Swiss ePrix and 2021 ABB New York City E-PRX race.

277. Defendant FIA also induced infringement of the U.S.-based Formula E teams BMW Andretti Motor Sport and Geox Dragon to directly infringe, literally or by equivalents, claims 1, 2 and 4 by making and using cars implementing the Halo in the U.S. for the 2019 U.S. ePrix, 2019-2020, and 2020-2021 Formula E seasons.

278. Defendant FIA also infringed claim 4 of the '178 patent, literally or by equivalents, when it caused to be supplied from the U.S. a substantial portion of the components of the invention in violation of Section 271(f)(1), that is the chassis with the Halo attached and other components, for assembly abroad in a manner that actively induced the combination of such components outside the United States and in a manner that would infringe if combined in the U.S. for the Formula E 2018-2019 and 2020-2021 seasons. In addition, or alternatively, FIA caused to be supplied from the U.S. the chassis of vehicles with the Halo as custom components that were especially made and especially adapted for use in the patented '178 inventions and not a staple article or commodity of commerce suitable for substantial non-infringing use, where such components were uncombined in whole or in part. Upon information and belief, FIA knew that the customized components were especially made and especially adapted for use in the patented '178 inventions, and intended that such components would be combined outside of the United States in a manner that would infringe, literally or by equivalents, the '178 patent if such combination occurred within the United States in violation of Section 271(f)(2):

- a) By BMW Andretti Formula E team from the U.S. in 2018 and 2019 to Saudi Arabia for the 2018-2019 and 2019-2020 ePrix seasons.

- b) By Geox Dragon Formula E team from the U.S. in 2018 and 2019 to Saudi Arabia for the 2018-2019, 2019-2020 and 2020-2021 ePrix seasons.
- c) By BMW Andretti Formula E team from the U.S. in 2020 for the Berlin ePrix. And from the U.S. in 2021 to Saudi Arabia.
- d) By Geox Dragon Formula E team from the U.S. in 2020 for the Berlin ePrix. And from the U.S. in 2021 to Saudi Arabia.
- e) By teams Envision Virgin, Nissan, Audi Sport, DS Techeetah, Mahindra Racing, NIO Formula E, Venturi Formula E, Panasonic Jaguar, and HWA Racelab Formula E team from the U.S. in 2019 and 2021 following the U.S. ePrix to their respective facilities in other countries.

279. Defendant FIA also induced all teams and drivers competing in the 2018 F3 Americas World Championship at COTA, and other races in and after 2018 in the U.S. to directly infringe, literally or by equivalents, claims 1, 2, and 4, by using cars that implemented the Halo in those events.

280. Defendant FIA is liable for infringement of the '178 patent, directly or indirectly, literally or by doctrine of equivalents, and its infringement has been and continues to be willful in nature.

281. Mr. Nygaard is entitled to actual and enhanced damages for this willful infringement pursuant to § 284, and attorneys' fees and costs under 35 U.S.C. § 285 as a result of the infringement of the '178 patent from Defendant FIA because this is an exceptional case.

282. Therefore, Mr. Nygaard is entitled to actual and/or compensatory damages, reasonable royalties, pre-judgment and post-judgment interest, enhanced damages, attorneys' fees, and costs and any other relief to which he is entitled to receive from Defendant FIA.

COUNT TWO

Infringement of the '178 Patent by FOM and FOWC

283. Mr. Nygaard incorporates by reference each and every allegation in the preceding paragraphs.

284. FOM and FOWC have infringed the '178 patent claims 1, 2, and 4 literally or alternatively by equivalents. All allegations of infringement against FOM and FOWC include literal infringement or alternatively, infringement under the doctrine of equivalents.

285. The patent is attached as Exhibit A and the amended illustrative charts attached as Exhibit B, and they are incorporated by reference herein. In particular, Mr. Nygaard reurges the infringement details from paragraphs 264–283 in Count One.

286. Defendants FOM and FOWC knew of the '178 patent as early as 2006 through communications between Mr. Nygaard and their predecessors Formula One and Delta through Mr. Eccelstone. Upon information and belief, they also knew about Mr. Nygaard's and the FIA Institute's licensing discussions in 2013; also through their predecessor entities' participation in the F1 Strategy Group they would have known about the patent by October 2013; and finally were informed by FIA of Mr. Nygaard's claims of infringement by FIA in late 2018 and early 2019.

287. Defendant FOM and FOWC induced direct infringement in violation of Section 271(b) by each requiring that each of the ten teams and twenty drivers participating in the U.S. Grand Prix events at COTA from October 19-21, 2018, November 1-3, 2019, and October 21-24, 2021, to use vehicles implementing the Halo in all races, practices and qualifying rounds each year, which caused them to directly infringe claims 1, 2, and 4 of the '178 patent.

288. Defendants FOM and/or FWOOC assist with, subsidize, and/or support transportation and logistics of movement of teams, personnel and equipment between and among Grand Prix Circuit races, including the U.S. Grand Prix Races.

289. Defendants FOM and FOWC also induced direct infringement of claims 1, 2, and 4 of the '178 patent in 2018, 2019, and 2021 by requiring all ten teams to import the chassis of their F1 vehicles with the Halo for the U.S. Grand Prix, which infringed claims 1 and 2 of the '178 patent, and assisting them with the transportation of their vehicles and equipment. They also induced the teams to make and use their cars infringing claim 4. They likewise induced the drivers of the cars in the U.S. Grand Prix races in 2018, 2019 and 2021 to use, and thereby infringe claims 1, 2 and 4 of the patent.

290. Defendants FOM and FOWC caused all ten F1 Grand Prix teams' vehicle chassis implementing the Halo and other substantial components of the invention to be supplied from the U.S. in each of 2018, 2019 and 2021 following the U.S. Grand Prix at COTA, for assembly abroad for use in subsequent races, infringing claim 4 in violation of Sections 271(f)(1). Alternatively, or in addition, the chassis with the Halo are custom components that were especially made and especially adapted for use in the patented '178 inventions and not a staple article or commodity of commerce suitable for substantial non-infringing use, where such components were uncombined in whole or in part. Upon information and belief, FOM and FOWC knew that the customized components were especially made and especially adapted for use in the patented '178 inventions, and intended that such components would be combined outside of the United States in a manner that would infringe claim 4 of the '178 patent if such combination occurred within the United States, and FOM and FOWC caused those components to be supplied from the U.S. for assembly abroad in a manner that would infringe if done in the U.S.:

- a) In 2018 and 2021 from COTA to Mexico for the Mexican Grand Prix.
- b) In 2019 from COTA to Brazil for the Brazilian Grand Prix.

291. Defendants FOM and FOWC induced the Haas racing team to infringe claims 1, 2, and 4 of the '178 patent by making and using vehicles with the Halo in and around Haas' facilities in the U.S. and at the 2018, 2019 and 2021 U.S. Grand Prix Races.

292. Defendants FOM and FOWC also infringed by causing Haas to supply from the U.S. substantial components of the inventions in claim 4 abroad for assembly into vehicles with the Halo in a manner that would infringe if in the U.S., for use in foreign Grand Prix events. Alternatively, or in addition, caused to be supplied from the U.S. custom components with no substantial non-infringing use but for the inventions, for assembly abroad, in a manner that would infringe claim 4 if, in the United States, for Grand Prix events. FOM and FOWC assisted in transportation of these materials for these purposes.

293. Alternatively, in the event all components were not assembled into an infringing configuration at the time of import for the 2018, 2019 and 2021 U.S. Grand Prix, then FOM and FOWC induced the teams to directly infringe claim 4 by assembling them into F1 cars that were to compete in the U.S. Grand Prix events in 2018, 2019, and 2021 and assisted in that transportation.

294. Defendants FOM and FOWC caused to be supplied from the U.S. substantial components that if assembled in the U.S. would infringe claim 4 of the '178 patent; or in addition or alternatively, custom components with no substantial non-infringing use other than assembly in a manner that would infringe if done in the U.S., by assisting in transportation of the vehicles and/or chassis with the Halo for all ten teams as follows:

a) In October 2018 and October 2021 from the United States following the U.S. Grand Prix at COTA to Mexico.

b) In November 2019 from the United States following the U.S. Grand Prix at COTA to Brazil.

295. Defendants FOM and FOWC are liable for infringement of the '178 patent, directly or indirectly, literally or by doctrine of equivalents, and its infringement has been and continues to be willful in nature.

296. Mr. Nygaard is entitled to actual and enhanced damages for this willful infringement pursuant to § 284, and attorneys' fees and costs under 35 U.S.C. § 285 as a result of the infringement of the '178 patent from Defendants FOM and FOWC because this is an exceptional case.

297. Therefore, Mr. Nygaard is entitled to actual and/or compensatory damages, reasonable royalties, pre-judgment and post-judgment interest, enhanced damages, attorneys' fees, and costs and any other relief to which he is entitled to receive from Defendants infringement of the '178 Patent by FOM and FOWC.

COUNT THREE

[Dismissed without prejudice by the Court over Plaintiff's Objection]

Infringement of the '178 Patent by Mercedes

298. Mr. Nygaard incorporates by reference each and every allegation in the preceding paragraphs, including the amended illustrative claim charts at Exhibit B and the infringement allegations in paragraphs 264–283 of Count One.

299. Mercedes has infringed the '178 patent claims 1, 2, and 4 literally or alternatively by equivalents. All allegations of infringement against Mercedes include literal infringement or alternatively, infringement under the doctrine of equivalents.

300. Mr. Nygaard incorporates by reference paragraphs 267 to 269, which explain how the claims apply to the accused F1 cars, the patent attached as Exhibit A and the illustrative claim charts attached as Exhibit B.

301. Defendant Mercedes knew of the '178 patent by mid-2013 when Mr. Paddy Lowe became the technical director for the team. Mr. Nygaard had presented his technology and discussed his '178 patent with Mr. Lowe shortly before Mr. Lowe left McClaren so that he could become technical director at Mercedes. Among other things, Mercedes hired Mr. Lowe for his experience and knowledge of racing technology gained most recently at McClaren, to improve its F1 Grand Prix vehicles. In addition, at the March 27, 2013 meeting at FIA with the FIA Institute and Dallara, the FIA Institute and Dallara discussed bringing Mercedes into the Project, including for making a prototype of the Halo. Upon information and belief, the FIA Institute and/or Dallara shared what was said and done at the March 27, 2013, meeting with Mercedes including discussion of the patent, or that Mercedes was otherwise informed of the patent during its involvement in the Project. Moreover, Mr. Nygaard had meetings with numerous Daimler employees in their facilities near Stuttgart, Germany in 2015 (and had previously corresponded with Daimler in 2011) which is notice to Mercedes given Daimler's control of and active involvement in Mercedes Grand Prix and Formula E racing teams. Further, Mercedes was part of the F1 Strategy Group that discussed the Halo in 2016 and adopted it in 2017 with other members of the Group and upon information and belief, the patent would have been discussed in these meetings. Accordingly, Mercedes knew about the '178 patent before it voted to adopt the Halo in the F1 Strategy Group

in 2017. Finally, upon information and belief, Mercedes was informed directly or as part of the F1 Strategy Group or participant about the licensing exchange between Mr. Nygaard and FIA in late 2018 and 2019.

302. Defendant Mercedes directly infringed and also induced direct infringement of claims 1, 2, and 4 of the '178 patent in violation of Section 271(b) by its drivers, Mr. Bottas and Mr. Hamilton, using cars implementing the Halo (as well as the “jagged windscreen”) in the 2018 and 2019 U.S. Grand Prix events.

303. Defendant Mercedes directly infringed claims 1, 2, and 4 by making the inventions in the U.S. when it assembled the component parts shipped to COTA for the 2018 and 2019 U.S. Grand Prix events, including the vehicle chassis implementing the Halo (and the “jagged windscreen”).

304. Defendant Mercedes directly infringed claims 1, 2, and 4 by importing the chassis for its vehicles for the 2018 and 2019 U.S. Grand Prix implementing the Halo together with other components for its F1 cars. Alternatively, Mercedes imported into the U.S. its vehicle chassis implementing the Halo, which are custom parts made especially for the invention with no substantial non-infringing use. These acts of importation occurred in 2018 by transporting vehicles and components from the Japanese Grand Prix to COTA for the U.S. Grand Prix, and in 2019 by transporting vehicles and components from the Mexican Grand Prix to COTA for the U.S. Grand Prix.

305. Defendant Mercedes infringed under § 271(f)(1) by causing a substantial portion of the components of the patented invention, including the vehicle chassis implementing the Halo, to be supplied to itself outside of the U.S. such that if the parts were assembled in the U.S. they would infringe claim 4 of the '178 patent, and in a manner that actively induced the combination

of such components outside the United States. In addition, or alternatively, Mercedes infringed claim 4 under § 271(f)(2) by causing custom components that were especially made and especially adapted for use in the patented '178 inventions and not a staple article or commodity of commerce suitable for substantial non-infringing use to be supplied from the U.S. to itself, where such components were uncombined in whole or in part. Upon information and belief, Mercedes knew that the customized components were especially made and especially adapted for use in the patented '178 inventions, and intended that such components would be combined outside of the United States in a manner that would infringe the '178 patent if such combination occurred within the United States. These acts occurred in transporting its vehicles and components from the 2018 U.S. Grand Prix at COTA to Mexico for the Mexican Grand Prix, and from the 2019 U.S. Grand Prix at COTA to Brazil for the Brazilian Grand Prix.

306. Defendant Mercedes is liable for infringement of the '178 patent, directly or indirectly, literally or by doctrine of equivalents, and its infringement has been and continues to be willful in nature.

307. Mr. Nygaard is entitled to actual and enhanced damages for this willful infringement pursuant to § 284, and attorneys' fees and costs under 35 U.S.C. § 285 as a result of the infringement of the '178 patent from Defendant Mercedes because this is an exceptional case.

308. Therefore, Mr. Nygaard is entitled to actual and/or compensatory damages, reasonable royalties, pre-judgment and post-judgment interest, enhanced damages, attorneys' fees, and costs and any other relief to which he is entitled to receive from Defendant Mercedes.

COUNT FOUR

[Dismissed without prejudice by the Court over Plaintiff's Objection]

Infringement of the '178 Patent by Ferrari

310. Mr. Nygaard incorporates by reference each and every allegation in the preceding paragraphs, including the amended illustrative claim charts at Exhibit B and the infringement allegations in paragraphs 264–283 of Count One.

311. Ferrari has infringed the '178 patent claims 1, 2, and 4 literally or alternatively by equivalents. All allegations of infringement against Ferrari include literal infringement or alternatively, infringement under the doctrine of equivalents.

312. Mr. Nygaard incorporates by reference paragraphs 267 to 269, which explain how the claims apply to the accused F1 cars, the patents attached as Exhibit A and the illustrative claim charts attached as Exhibit B.

313. Ferrari became part of the Project by 2015, and tested an F1 car with the Halo in the Spring of 2016 in events around the Spanish Grand Prix as part of the Project. Ferrari was part of the F1 Strategy Group that discussed the Halo in 2016 and adopted it in 2017 and upon information and belief, would have discussed the patent in those meetings. Ferrari also applied for an Italian patent that incorporated the Halo design in 2018, and cited the Nygaard patent during prosecution of its U.S. counterpart patent on June 7, 2019. Upon information and belief, Ferrari knew about the Nygaard patent by 2016 through its involvement in the Project or the F1 Strategy Group or both, and in any event before June 7, 2019.

314. Defendant Ferrari induced direct infringement of claim 4 of the '178 patent in violation of Section 271(b) by its drivers using cars implementing the Halo, in the 2018 U.S. Grand Prix, Kimi Räikkönen (who won the race) and Sebastian Vettel (who placed fourth). Likewise, Ferrari induced direct infringement of claim 4 by use by its drivers in the 2019 U.S. Grand Prix events, Sebastian Vettel and Charles Leclerc (who placed fourth).

315. Defendant Ferrari directly infringed claim 4 by making the inventions in the U.S. when it assembled the component parts shipped to COTA for the 2018 and 2019 U.S. Grand Prix events, including the vehicle chassis implementing the Halo.

316. Defendant Ferrari directly infringed claims 1, 2, and 4 by importing the chassis for its vehicles for the 2018 and 2019 U.S. Grand Prix implementing the Halo together with other components for its F1 cars. Alternatively, Ferrari imported into the U.S. its vehicle chassis implementing the Halo, which are custom parts made especially for the invention with no substantial non-infringing use. These acts of importation occurred in 2018 by transporting vehicles and components from the Japanese Grand Prix to COTA for the U.S. Grand Prix, and in 2019 by transporting vehicles and components from the Mexican Grand Prix to COTA for the U.S. Grand Prix.

317. Defendant Ferrari infringed under § 271(f)(1) by causing a substantial portion of the components of the invention, including the vehicle chassis implementing the Halo, to be supplied to itself outside of the U.S., such that if the parts were assembled in the U.S. they would infringe claim 4 of the '178 patent, and in a manner that actively induced the combination of such components outside the United States. In addition, or alternatively, Ferrari infringed claim 4 under 271(f)(2) by causing custom components (e.g., vehicle chassis with the Halo) that were especially made and especially adapted for use in the patented '178 inventions and not a staple article or commodity of commerce suitable for substantial non-infringing use to be supplied from the U.S. to itself, where such components were uncombined in whole or in part. Upon information and belief, Ferrari knew that the customized components were especially made and especially adapted for use in the patented '178 inventions, and intended that such components would be combined outside of the United States in a manner that would infringe the '178 patent if such combination

occurred within the United States. These acts occurred in transporting its vehicles and components from the 2018 U.S. Grand Prix at COTA to Mexico for the Mexican Grand Prix, and from the 2019 U.S. Grand Prix at COTA to Brazil for the Brazilian Grand Prix.

318. Defendant Ferrari also directly infringed claims 1, 2, and 4 of the '178 patent by using vehicles implementing the Halo in the 2018 and 2019 U.S. Grand Prix events at COTA.

319. Defendant Ferrari is liable for infringement of the '178 patent, directly or indirectly, literally or by doctrine of equivalents, and its infringement has been and continues to be willful in nature.

320. Mr. Nygaard is entitled to actual and enhanced damages for this willful infringement pursuant to § 284, and attorneys' fees and costs under 35 U.S.C. § 285 as a result of the infringement of the '178 patent from Defendant Ferrari because this is an exceptional case.

321. Therefore, Mr. Nygaard is entitled to actual and/or compensatory damages, reasonable royalties, pre-judgment and post-judgment interest, enhanced damages, attorneys' fees, and costs and any other relief to which he is entitled to receive from Defendant Ferrari.

COUNT FIVE

Infringement of the '178 Patent by RBR and RBT

322. Mr. Nygaard incorporates by reference each and every allegation in the preceding paragraphs.

323. RBR and RBT have infringed the '178 patent claims 1, 2, and 4 literally or alternatively by equivalents. All allegations of infringement against RBR and RBT include literal infringement or alternatively, infringement under the doctrine of equivalents.

324. Mr. Nygaard incorporates by reference paragraphs 264–283 of Count One, which explain how the claims apply to the accused F1 cars and the Halo, the patent attached as Exhibit A and the amended illustrative claim charts attached as Exhibit B.

325. The inaugural meeting of the F1 Strategy Group was in October 2013. Prior to the meeting, RBR and all other members of the F1 Strategy Group received a memorandum from Mr. Andy Mellor of the FIA Institute on the development of additional frontal protection for drivers. Mr. Mellor’s memorandum discussed the “Nygaard Patent” at length, and described how it applied to devices being considered for additional head protection exploiting binocular vision. This memorandum followed a series of meetings in November and December 2012, and also March and April 2013, between Mr. Mellor, others at FIA Institute, FIA, McLaren, Dallara and Mr. Nygaard regarding Mr. Nygaard’s patented technology. In addition, prior to the October 2013 meeting, there was correspondence in May and June 2013, between Mr. Nygaard and FIA Institute’s chief administrative officer, Quentin Crombie, about licensing the ’178 patent. The October 2013 memorandum from Mr. Mellor did not provide the title or number of the U.S. Patent or its claims or limitations, but did discuss at length the applicability of the “Nygaard Patent” to devices being tested and considered by FIA for additional frontal protection exploiting BVT technology for driver safety. It would have been a very simple matter to locate the patent online or to simply ask FIA or FIA Institute or Mr. Mellor for the patent or its number. Mr. Christian Horner was then and is now a director of both RBT and RBR, and was then and is now the CEO of RBT as well as the principal (CEO) of RBR. Mr. Horner represented RBR at the F1 Strategy Group meeting in October 2013 (and, in fact, gave a presentation at the meeting). Mr. Horner and the other members of the F1 Strategy Group voted on the development of additional frontal

protection for drivers at that inaugural meeting.¹⁷ RBR and RBT have produced a copy of Mr. Mellor's October 2013 memorandum. The discussion of the patent in Mr. Mellor's memorandum was either notice for the purpose of 271(b) and 271(f) infringement, or, alternatively, the failure to review the patent was willful blindness. Accordingly, RBT and RBR had notice of the '178 patent no later than October 2013.

326. RBT monitored the development of safety devices for drivers' heads and necks, along with IndyCar from about 2011. RBT developed an alternative to the Halo design during the Project, the Aeroscreen. RBT tested its Aeroscreen in 2016 in events surrounding the Russian Grand Prix.

327. RBR was part of the F1 Strategy Group that discussed the Halo in 2016 and 2017 and voted in unanimity with other member of the F1 Strategy Group to adopt the Halo starting with the 2018 Grand Prix season. RBR also participated in drafting specifications for the installation of the Halo, later promulgated as rules by the FIA. In addition, RBT worked on development of the Aeroscreen as part of the Project and proposed it as a solution to the F1 Strategy Group and FIA.

328. In September 2017, Aston Martin, RBT and RBR announced a collaboration where Aston Martin would become a named sponsor of the team. RBT, including its Chief Technical Officer, Adrian Newey, would also collaborate on Aston Martin's car design, and Aston Martin would share technical information with RBT and RBR. Mr. Nygaard made presentations to Aston Martin and it was aware of his '178 patent prior to the collaboration.

¹⁷ The memorandum also followed PowerPoint documents distributed to others interested in additional frontal protection and binocular vision by Mr. Mellor in at least May and September 2013. These PowerPoint documents were produced by Red Bull in this lawsuit, and included "AlphaPillars" graphics from Mr. Nygaard.

329. At some point around 2018, RBT and Dallara ~~entered into~~ discussed a collaboration to further develop, test and bring to market the current version of the Aeroscreen for IndyCars. Dallara was fully informed about Mr. Nygaard's '178 patent from its past in-person dealings with him. IndyCar was also aware of Mr. Nygaard's patent through Dr. Trammell, who participated in FIA meetings on additional frontal protection. The modifications of the Aeroscreen adopted the Halo as depicted in Mr. Nygaard's patent.

330. In December 2019, the racing press publicized a Ferrari published patent application, whose prosecution history included the Nygaard patent.

331. Further, FOM received in fall of 2018 a royalty demand from Mr. Nygaard on the '178 patent. FIA received licensing demands from Mr. Nygaard in 2019.

332. RBT's and RBR's infringing acts in the U.S. were made knowing of Mr. Nygaard's patent and that it applied to the Halo and Aeroscreen. RBT and RBR have acted in willful disregard of Mr. Nygaard's rights.

Halo

333. Defendant RBR induced direct infringement, literally or by equivalents, of claim 4 of the '178 patent in violation of § 271(b) by its drivers using cars implementing the Halo, in the 2018 U.S. Grand Prix, Max Verstappen (finished second) and Daniel Riccardo.

334. Likewise, RBR induced direct infringement, literally or by equivalents, of claim 4 of the '178 patent by its drivers using vehicles implementing the Halo in the 2019 U.S. Grand Prix events, Max Verstappen (finished third) and Alexander Albon (finished fifth).

335. RBR also induced direct infringement, literally or by equivalents of Max Verstappen and Sergio Perez in the 2021 U.S. Grand Prix events, where Mr. Verstappen finished in first place and Mr. Perez finished in third place. RBR also induced direct infringement, literally

or by equivalents, of other drivers it had under contract who raced in the 2018, 2019 and 2021 U.S. Grand Prix for Scuderia Toro Rosso.

336. Defendant RBR directly infringed, literally or by equivalents, claim 4 by making the inventions in the U.S. when it assembled the component parts shipped to COTA for the 2018, 2019 and 2021 U.S. Grand Prix events, including the vehicle chassis implementing the Halo.

337. Defendant RBR directly infringed, literally or by equivalents, claims 1, 2, and 4 by importing the chassis for its vehicles for the 2018, 2019 and 2021 U.S. Grand Prix implementing the Halo together with other components for its F1 cars. Alternatively, RBR imported into the U.S. its vehicle chassis implementing the Halo, which are custom parts made especially for the invention with no substantial non-infringing use, infringing claim 4 of the '178 patent. These acts of importation occurred in 2018, 2019 and 2021 by transporting vehicles and components from other countries to the United States for the U.S. Grand Prix races.

338. Defendant RBR infringed under § 271(f)(1) by causing a substantial portion of the components of the invention, including the vehicle chassis implementing the Halo, to be supplied to itself outside of the U.S. such that if the parts were assembled in the U.S. they would infringe, literally or by equivalents, claim 4 of the '178 patent, and in a manner that actively induced the combination of such components outside the United States. In addition, or alternatively, RBR infringed under § 271(f)(2) by causing custom components that were especially made and especially adapted for use in the patented '178 inventions and not a staple article or commodity of commerce suitable for substantial non-infringing use to be supplied from the U.S. to itself, where such components were uncombined in whole or in part. Upon information and belief, RBR knew that the customized components were especially made and especially adapted for use in the patented '178 inventions, and intended that such components would be combined outside of the

United States in a manner that would infringe claim 4 of the '178 patent if such combination occurred within the United States. These acts occurred in transporting its vehicles and components from the 2018 and 2021 U.S. Grand Prix at COTA to Mexico for the Mexican Grand Prix, and from the 2019 U.S. Grand Prix at COTA to Brazil for the Brazilian Grand Prix.

339. Defendant RBR also directly infringed claims 1, 2, and 4 of the '178 patent by making (assembling) and using vehicles implementing Halo in the 2018, 2019 and 2021 U.S. Grand Prix events at COTA.

Aeroscreen

340. The Aeroscreen infringes claims 1 and 2 of the '178 patent literally or by doctrine of equivalents as set forth below. Vehicles implementing the Aeroscreen infringe claims 1, 2, and 4 of the '178 patent. The patent is attached as Exhibit A and claim charts illustrating infringement are attached as Exhibit B and incorporated herein by reference. Claim 1:

A **strengthening member** [the Halo portion of the Aeroscreen] for use in a road vehicle [IndyCars], **for fixing to a structure of the vehicle, and for extending in front of the driver's position** [the vertical member (central pillar) of the Halo portion of the Aeroscreen is fixed to the car at a point in front of the cockpit within the claim construction literally or by equivalents], **the strengthening member being dimensioned so that, when in use, the strengthening member will not prevent the driver from seeing an object which is at least 2 m from the front windscreen**, [the Aeroscreen has a front windscreen][the driver can see objects, e.g., other cars, at this distance when the Aeroscreen is implemented on the vehicle] **when the driver uses binocular vision** [the driver uses binocular vision, e.g., drivers reported no vision issues with the Aeroscreen], and **without requiring the driver to move the driver's head** [the driver does not need to

move his or her head to see objects when driving, e.g., other cars in front while driving], wherein the strengthening member has the form of a triangular prism which has been sheared in a vertical plane or **the form of a truncated sheared triangular pyramid**. [the Aeroscreen has the form of a truncated sheared triangular pyramid as formed by its angled vertical member in conjunction with the other angled portion or its equivalent].

341. Claim 2 of the '178 patent is infringed literally or by doctrine of equivalents by the Aeroscreen, *see* Exhibits A and B:

A strengthening member [the Halo portion of the Aeroscreen] for mounting in a **vehicle** [IndyCars], **formed of at least three first linearly extending structural units placed in a triangular arrangement for extending from the front structure of the vehicle** [an end of each of the three first linearly extending structural units extends from the front structure of the vehicle] and **second linearly extending structural unit joining the at least three first linearly extending units** [portion of the Aeroscreen extending around the cockpit], the **second structural units** being not horizontal [slanted], and wherein **the first linearly extending structural units of the strengthening member have a width not exceeding 65 mm** [central pillar width of the Aeroscreen equals to or is less than 65mm], **the strengthening member having a connection for fixing the strengthening member to the vehicle** [the Aeroscreen is fixed to the vehicle by at least one connection], whereby, **when mounted in the vehicle, the strengthening member extends obliquely to the vertical direction of the vehicle**. [all angles on the Aeroscreen are oblique to (slanted with respect to) the vertical direction of the vehicle].

342. Claim 4 of the '178 patent is infringed literally or by doctrine of equivalents by vehicles incorporating the Aeroscreen, *see* Exhibits A and B:

A road vehicle [IndyCar] comprising at least one strengthening member [the Aeroscreen] fixed to a structure of the vehicle [the Aeroscreen is fixed to the front of the automobile chassis] and extending in front of the driver's position [a member (central pillar) of the Aeroscreen is fixed to the car at a point in front of the cockpit within the claim construction literally or by equivalents], wherein the strengthening member is dimensioned so that the strengthening member will not prevent the driver from seeing an object which is at least two meters from the front windshield [the driver can see objects, e.g., other cars, at this distance when the Aeroscreen is implemented on the vehicle], when the driver uses binocular vision [the driver uses binocular vision, e.g., drivers report that the front member of the Aeroscreen that extends in the front of the cockpit does not interfere with their vision when driving] and without requiring the driver to move the driver's head, [the driver does not need to move his or her head to see objects when driving, e.g., other vehicles in front while driving] wherein the strengthening member has the form of a triangular prism which has been sheared in a vertical plane or a truncated sheared triangular pyramid. [the Aeroscreen has the form of a truncated sheared triangular pyramid as formed by its angled vertical member in conjunction with the other angled portion or its equivalent].

343. In 2019, Defendants RBT and Dallara and others developed an Aeroscreen that combined a Halo made by Pankl, “tear-off” “jet cockpit type” windscreens by PPG, which was tested by them in the United States. The Aeroscreen was assembled with structural components from Dallara that connected the Aeroscreen to the Dallara chassis used in all IndyCars, and components from others. This Aeroscreen was especially designed for and its parts made for combination with the Dallara chassis used in IndyCar, the DW12.

344. The first test for the Aeroscreen in a racing environment with all teams was planned for February 11, 2020 at COTA. RBT participated in the event through its project manager Andy Damerum. Dallara is reported to have struggled to ship sufficient Aeroscreen kits in time for the February 11, 2020 COTA open practice. (The February 11, 2020 open practice would be the first ticketed event for the public of the 2020 NTT IndyCar 500 Season). Additional days of testing were set for February 12, 2020 at COTA and February 14, 2020 at the Texas Motor Speedway near Fort Worth. The RBT representative held a press conference in Austin on February 10, 2020. It rained periodically during the first day of testing, and it was learned by RBT and Dallara that the Aeroscreen leaked in the rain. They also got feedback from the teams and the drivers on other aspects of the design, and in particular the heat build-up caused by the windscreen almost enclosing the cockpit. Upon information and belief, as a result of the testing in Texas, the Aeroscreen was fine-tuned to resolve the leaks, and RBT did research to improve the Aeroscreen. For example, RBT continued to test and consult on component parts after the February 2020 events.

345. The start of the 2020 NTT IndyCar 500 circuit was delayed due to the COVID-19 pandemic. The opening races in Florida were cancelled due to the COVID-19 pandemic, as was a subsequent race at COTA, among others. The first race of the 2020 season was June 6, 2020, at Texas Motor Speedway outside of Fort Worth, Texas. Since then, there have been other races, including a July 2020 race in Iowa where the Aeroscreen ~~is~~ was credited with having saved three drivers involved from death or serious injury. On August 27, 2020, driver James Davison credited the Aeroscreen with saving him from injury from debris, flames, smoke and fumes, following serious malfunctioning of his car (master brake cylinder). At the 2020 Indy 500, driver Spencer Pigot credited the Aeroscreen with saving him from serious injury.

346. The Aeroscreen was used by all IndyCar teams and drivers in the 2021 Season. The Aeroscreen is credited with saving drivers from injury or death in accidents in April 2021 in Alabama and in May 2021 in Texas.

347. RBT induced direct infringement, literally or by equivalents, of claims 1, 2, and 4 of the '178 patent by NTT Indy500 teams in violation of Section 271(b) by providing detailed drawings, consultation, review and comments on Aeroscreen components as well as their use and efficacy, and information about the installation and use of the Aeroscreen. RBT also induced infringement by publicizing the Aeroscreen at a May 2019 joint press conference with IndyCar and at other times.

348. RBT induced direct infringement by IndyCar and the drivers in tests of the Aeroscreen on IndyCars in 2019 in the United States, including at Richmond Raceway in Richmond, Virginia, on October 15, 2019, and at Sebring International Raceway in Sebring, Florida, on November 5, 2019. RBT had a representative at, and induced infringement by, all teams and drivers participating in the Official NTT IndyCar 500 practices in mid-February 2020 at COTA in Del Valle, Texas, and Texas Motor Speedway in Fort Worth, Texas. RBT induced infringement by teams and drivers at all IndyCar official practices, qualifying and racing events since 2020, including, the first race of the season in June 2020 at the Texas Motor Speedway, as well as subsequent races in this and later seasons in the U.S. The teams directly infringed, literally or by equivalents, claims 1, 2, and 4 by making vehicles that implemented the Aeroscreen and using them in those events. The drivers directly infringed, literally or by equivalents claims 2 and 4 because they used the inventions when they drove vehicles in those events.¹⁸

¹⁸ All allegations of contributory infringement of the Aeroscreen pursuant to 271(c) are withdrawn.

349. RBT directly infringed, literally or by equivalents, claims 1, 2 and 4 of the '178 patent by using the inventions when participating in testing the Aeroscreen on IndyCars in at least 2019.

350. IndyCar racing in the U.S. is continuing and RBT's and Dallara's continued support for the Aeroscreen is inducement of direct infringement, literally or by equivalents, of claims 1, 2, and 4 by the IndyCar teams making (assembling) vehicles at race locations by use of vehicles implementing the Aeroscreen, as well as direct infringement of claim 4 by drivers using vehicles with the Aeroscreen in regard to their driving in the U.S. at IndyCar events and otherwise.

As to both the Halo and the Aeroscreen

351. Mr. Nygaard is entitled to actual and enhanced damages for this willful infringement pursuant to 35 U.S.C. § 284, and attorneys' fees and costs under 35 U.S.C. § 285 as a result of the infringement of the '178 patent from Defendants RBT and RBR because this is an exceptional case.

352. Therefore, Mr. Nygaard is entitled to actual and/or compensatory damages, reasonable royalties, pre-judgment and post-judgment interest, enhanced damages, attorneys' fees, and costs and any other relief to which he is entitled to receive from Defendants RBT and RBR.

COUNT SIX

[Dismissed July 16, 2021 for lack of personal jurisdiction]

Infringement of the '178 Patent by Dallara

353. Mr. Nygaard incorporates by reference each and every allegation in the preceding paragraphs.

354. Dallara has infringed the '178 patent claims 1, 2, and 4 literally or alternatively by equivalents. All allegations of infringement against Dallara include literal infringement or alternatively, infringement under the doctrine of equivalents.

355. Mr. Nygaard incorporates by reference paragraphs 264–283 of Count One, which explain how the claims apply to the accused Halos and F1 cars, and paragraphs 339 to 341 which explain how the claims apply to the accused Aeroscreens and IndyCars.

356. Mr. Nygaard further incorporates by reference the patents attached as Exhibit A and the amended illustrative claim charts attached as Exhibit B.

357. Dallara participated in the Project with the FIA Institute at least since the March 27, 2013, meeting among its Chief of Design, Luca Pignacca, and GP technical director Didier Perrin, Mr. Nygaard, and the FIA Institute at FIA headquarters in Paris. Dallara's Mr. Pignacca and Mr. Perrin were told by Mr. Nygaard that his technology was protected by his patents at that meeting. Designs that came from figures, text and inventions of the '178 patent were discussed at the meeting. The strengthening member that emerged from the meeting, later called the Halo, is based on the patent (among others), and infringes claims 1 and 2 of the '178 patent, and when implemented in a race car also claim 4 of the '178 patent.

358. The Project's work implementing Mr. Nygaard's inventions into the Halo continued with the addition of Mercedes and Ferrari, which made prototypes and tested the Halo. RBT monitored the Project with IndyCar but decided to work on an alternative to the Halo, its Aeroscreen. In 2016, the F1 Strategy Group considered adoption of the Halo for F1, but delayed the decision for one year to look for alternatives. After the F1 Strategy Group meeting in July 2017, FIA adopted regulations requiring use of the Halo.

Halo

359. Dallara knew at the time of the March 27, 2013, meeting with Mr. Nygaard, that one of the most significant races on the Grand Prix Circuit is the U.S. Grand Prix at COTA.

360. Dallara entered into a collaboration with Haas when Haas entered F1 racing, to develop Haas' cars and to collaborate on preparation for and racing in Grand Prix events. Dallara designed the chassis for Haas cars for implementing the Halo for use in the 2018 and 2019 Grand Prix Seasons knowing that the one race in the U.S., the U.S. Grand Prix, for the one team based in the U.S., Haas, would be held in Texas at COTA in each of those years. Dallara shipped parts from Italy to COTA for Haas' use in the 2018 U.S. Grand Prix. On information and belief, Dallara directly infringed claims 1, 2, and 4 of the '178 patent by collaborating with Haas to make and use cars implementing the Halo. This direct infringement was U.S. Grand Prix events in 2018 and 2019 and at or around Haas' facility is in North Carolina from 2018 through about 2021.

361. Alternatively, Dallara induced direct infringement by Haas of claims 1, 2 and 4 of the patent by making F1 vehicles implementing the Halo and by using them to participate in the U.S. Grand Prix as well as other places around its U.S. headquarters.

362. An August 30, 2016, article on Haas' website credits Dallara with jump starting its entry into F1, writing, "famed racecar builder Dallara has Haas F1 Team's design staff embedded in its Parma headquarters." Guenther Steiner, Haas Team Principal at the time, is quoted in the article as saying "Dallara is a big part of our team. They were there at the beginning of our team and they still are. With time, the relationship has gotten better and easier." He was also quoted as

saying, “We sub-contract a team of engineers from their [Dallara] pool of engineers to work for us.”¹⁹

363. Dallara induced direct infringement by Haas of claims 1, 2, and 4 of the ’178 patent by designing, contributing to, supporting and encouraging Haas to make and use the inventions, and also inducing Haas’ drivers to directly infringe by using Haas vehicles with the Halo in 2018 and 2019 U.S. Grand Prix races at COTA., and also at Haas’ facilities in the U.S. for the 2020 Grand Prix Season.

364. Dallara has further induced direct infringement of claims 1, 2, and 4 of the ’178 patent by designing, contributing to, supporting and encouraging all Formula E teams to drive in the 2019 U.S. ePrix in New York City with Spark Gen2 cars that implemented the Halo. Dallara designed and produced the chassis for those cars, the Spark Gen 2, which was made to accommodate and include the Halo, for the 2018-2019 Formula E Season. All teams and drivers directly infringed claim 4 when they used the Spark Gen 2 implementing Halo in the 2019 U.S. ePrix in New York City.

365. Dallara also induced direct infringement of claims 1, 2 and 4 by BMW Andretti and Geox Dragon, U.S.-based teams, by their making (assembling) and using vehicles with the Halo.

366. Dallara also induced direct infringement by Spark Racing Technology in that it offered for sale and sold in this country the Spark Gen2 and Spark Gen2 EVO cars, with chassis that included the Halo. Dallara designed and made these chassis with the Halo.

¹⁹ Haas, *The Italian Job*, HAAS F1 TEAM (Aug. 30, 2016), <http://www.haasf1team.com/news/italian-job#:~:text=Maranello-based%20Ferrari%20provides%20Haas%20F1%20Team%20with%20itsrunning%20with%20drivers%20Romain%20Grosjean%20and%20Esteban%20Guti%C3%A9rrez>.

367. Dallara induced direct infringement of the patent by promoting the use of the Halo by its role in designs of the Spark cars by all teams and drivers in the U.S. Formula E ePrix races in New York City in July 2019 and July 2021.

Aeroscreen

368. At some point in late 2018 or early 2019, Dallara worked on development of the Aeroscreen with RBT. Dallara was fully informed about Mr. Nygaard's '178 patent from its past in-person dealings with him. Dallara suggested to RBT in or around late 2018 or early 2019 that the Halo be incorporated into the Aeroscreen for strength, and it was then made part of the Aeroscreen.

369. Dallara was aware that there were multiple IndyCar events at the COTA and Texas Motor Speedway during its work on the Aeroscreen.

370. The first test for the Aeroscreen in a racing environment with all teams was February 11, 2020 at COTA. Dallara is reported to have struggled to ship sufficient Aeroscreen kits to IndyCar teams in time for the February 11, 2020 COTA open practice. (The February 11, 2020 open practice would be the first ticketed event for the public of the 2020 NTT IndyCar 500 Season). Additional days of testing were set for February 12, 2020 at COTA and February 14, 2020 at the Texas Motor Speedway near Fort Worth. At least one technical person from RBT attended the practices at COTA. The RBT representative also held a press conference in Austin on February 10, 2020. It rained periodically during the first day of testing, and it was learned by RBT and Dallara that the Aeroscreen leaked in the rain. They also got feedback from the teams and the drivers on other aspects of the design, and in particular the heat build-up caused by the windscreen (which almost encloses the cockpit). Upon information and belief, as a result of the

testing in Texas, and information provided to it, Dallara made modifications to the Aeroscreen to resolve the leaks and research was done to find options to deal with them.

371. The start of the 2000 NTT IndyCar 500 circuit was delayed, with the opening races in Florida being cancelled due to the COVID-19 pandemic. The first race of the 2020 season was June 6, 2020 at Texas Motor Speedway outside of Fort Worth, Texas. Since then, there have been other races in the U.S., including a July 2020 race in Iowa where the Aeroscreen is credited with having saved three drivers involved in a big accident from death or serious injury. On August 27, 2020, driver James Davison credited the Aeroscreen with saving him from injury from debris, flames, smoke and fumes, following serious malfunctioning of his car (master brake cylinder). Since then the Aeroscreen has been credited with saving drivers from death or serious injury at races in Alabama and Texas in 2021.

372. The Aeroscreen is in use in IndyCar Circuits in the 2021 Season.

373. Dallara induced direct infringement, literally or by equivalents, of claims 1, 2, and 4 of the '178 patent by NTT Indy500 teams making (assembling) and using their vehicles with the Aeroscreen in 2020 events in violation of Section 271(b) by providing parts, consultation, improvements, and information about the installation and use of the Aeroscreen. Likewise, Dallara induced direct infringement of claim 4 by drivers using these cars in the U.S.

374. Dallara induced and also contributed to direct infringement, literally or by equivalents, of claims 1, 2, and 4 of the '178 patent by teams and drivers in IndyCar circuits by shipping into the U.S. customized Aeroscreen parts that constitute material components of the patented '178 inventions that have no substantial non-infringing use, which were then combined in the U.S. to make and use the inventions here. Upon information and belief, Dallara knew the customized Aeroscreen parts were especially made and especially adapted for infringing use of the

'178 patent, and were not a staple article or commodity of commerce suitable for substantial non-infringing use. Dallara also is liable for contributory infringement for offering for sale and selling such components.

375. Dallara has directly infringed, literally or by equivalents, claims 1 and 2 of the '178 patent by importing, offering for sale and selling the Aeroscreen in the U.S. to IndyCar teams.

376. IndyCar racing in the U.S. is continuing and RBT's and Dallara's continued support for the Aeroscreen is inducement of direct infringement, literally or by equivalents, of claims 1, 2 and 4 by the IndyCar teams who make (assemble) and use vehicles with the Aeroscreen. Likewise RBT and Dallara are also inducing direct infringement, literally or by equivalents, of claim 4 by the drivers at these events and other times and places in the U.S.

As to both the Halo and the Aeroscreen

376. COTA is the only place in the U.S. that hosts both IndyCar and F1 Grand Prix events. It is one of the most important locations for motor sports in the U.S. COTA has received benefits from state and local governments to support its operation and success, including at least some reimbursement of location fees for F1 races. COTA and its events are of enormous importance to the State of Texas and also local governments.

377. Mr. Nygaard is entitled to actual and enhanced damages for this willful infringement pursuant to 35 U.S.C. § 284, and attorneys' fees and costs under 35 U.S.C. § 285 as a result of the infringement of the '178 patent from Defendant Dallara because this is an exceptional case.

378. Therefore, Mr. Nygaard is entitled to actual and/or compensatory damages, reasonable royalties, pre-judgment and post-judgment interest, enhanced damages, attorneys' fees, and costs and any other relief to which he is entitled to receive from Defendant Dallara.

COUNT SEVEN

[Dismissed without prejudice by the Court over Plaintiff's Objection]

Infringement of the '178 Patent by Daimler

379. Mr. Nygaard incorporates by reference each and every allegation in the preceding paragraphs, including the amended illustrative claim charts at Exhibit B and the infringement allegations in paragraphs 264–283 of Count One.

380. Daimler has induced infringement of the '178 patent claims 1, 2, and 4 literally or alternatively by equivalents by Mercedes and HWA at FIA-sanctioned races in the U.S. in 2018 and 2019, and by Mercedes Formula E Ltd. in 2021 at the U.S. ePrix in July in New York City. All allegations of infringement include literal infringement or alternatively, infringement under the doctrine of equivalents.

381. Mercedes Formula E Ltd. is the alter-ego of Daimler because it lacks sufficient capital or resources to sustain itself, is funded by Daimler, the significant decisions in its business are made by Daimler, its board is dominated by Daimler, and Daimler runs it to benefit its other businesses, especially its Mercedes-Benz EQ branded vehicles. Daimler made the decision to start a Formula E team for Mercedes Formula E Ltd., and did so by contracting with HWA to field the HWA Racelab Team to develop a car and establish a foundation in the 2018-2019 season to facilitate Mercedes Formula E Ltd.'s entry into Formula E in 2019-2020. Mercedes Formula E Ltd. entered Formula E in late 2019 for the 2019-2020 season as planned. Daimler installed different team principals from its F1 team. Upon information and belief, Daimler directly runs the day-to-day operations, as well as sets the direction of Mercedes Formula E team. HWA appears to provide the infrastructure for the Mercedes Formula E team, upon information and belief, Daimler manages and pay for this support. Mercedes Formula E Ltd.'s most recent filed financial

statement, as of December 31, 2019, show it is dependent on Daimler's funding, including its interest-free cash resources.

382. Mr. Nygaard incorporates by reference paragraphs 267 to 269, which explain how the claims apply to the accused F1 and Formula E cars, the patents attached as Exhibit A and the amended illustrative claim charts attached as Exhibit B.

383. Mercedes is the agent and alter-ego for Daimler for Formula One Grand Prix racing, and its acts are those of Daimler's for these events. Mercedes is an indirect subsidiary of Daimler, with Daimler as its ultimate controlling party. Daimler executives have dominated Mercedes' Board: Daimler's COO, Head of Marketing and Sales, and Director of Cooperation and Innovation. Daimler's current Chairman of the Board and CEO was a member of the board until 2019 when he assumed his current roles. In Mercedes' December 2018 financial statement, its auditors would have issued a going concern warning, but for assurances from the Daimler executives that Daimler would support Mercedes. In 2018, Daimler put approximately 90,000,000 GBP into Mercedes and also carried over 73,000,000 GBP of interest-free debt for it. Daimler controlled whether Mercedes would continue in F1 when the 2013 contract expired at the end of 2020: In 2020, its Chairman and CEO has stated Daimler would keep Mercedes in F1. Daimler also designated Mercedes Grand Prix drivers for 2021, when Daimler's CEO stated in July 2020, it would continue with its two current drivers, Mr. Bottas and Mr. Hamilton. And it is common-sense that Daimler would actively control and subsidize Mercedes' operations, since Mercedes' F1 team generates over \$5 billion dollars in positive advertising and brand building for the Daimler Group.

384. Alternatively, Daimler and Mercedes should be considered as a single enterprise and corporate distinctions ignored for the purpose of this case. The same is true for Daimler and Mercedes Formula E Ltd.

385. Daimler knew about the '178 patent upon being contacted by Mr. Nygaard in 2011. Defendant Mercedes knew of the '178 patent by mid-2013 when Mr. Paddy Lowe became the technical director for the team. Mr. Nygaard presented his technology and discussed his '178 patent with Mr. Lowe shortly before Mr. Lowe left McClaren so that he could become technical director at Mercedes. Mercedes hired Mr. Lowe for his experience and knowledge of racing technology to improve its vehicles and their performance. In addition, at the March 27, 2013, meeting at FIA with the FIA Institute and Dallara, the FIA Institute and Dallara discussed bringing Mercedes into the project to make a prototype of the Halo. Further, Mercedes later did develop a prototype of the Halo. Upon information and belief, Mercedes was told about Mr. Nygaard's patent from the Project. Moreover, Mr. Nygaard had meetings with numerous Daimler employees in their facilities near Stuttgart, Germany in 2015. Further, Mercedes was part of the F1 Strategy Group that discussed the Halo in 2016 and adopted it in 2017. Accordingly, Mercedes knew about the '178 patent before it was adopted in July 2017. Daimler likewise knew about the '178 patent when it created the HWA Racelab team to compete in Formula E using Spark Gen2 and Spark Gen2EVO vehicles that implement the Halo.

386. Defendant Daimler induced direct infringement of claims 1, 2, and 4 of the '178 patent in violation of Section 271(b) by engaging HWA to directly infringe by importing the Formula E vehicles into the U.S. for the 2019 U.S. ePrix, making (assembling) its vehicles upon arrival in the U.S. for that event, and using vehicles that implement the Halo in the 2019 U.S. ePrix in New York City. Further, upon information and belief, Formula E cars are shipped as

components and the vehicle chassis implementing the Halo is a custom component with no substantial non-infringing use, but to be assembled into a vehicle implementing the Halo, and HWA infringed claims 1, 2, and 4 by making the inventions when assembling the components of its car for the 2019 U.S. Grand Prix.

387. Defendant Daimler violated Section 271(f)(1) by causing a substantial portion of the components of the invention, including Formula E vehicle chassis implementing the Halo, to be supplied to HWA outside of the U.S. such that if the parts were assembled in the U.S. they would infringe claim 4 of the '178 patent, and in a manner that actively induced the combination of such components outside the United States. In addition, or alternatively, Daimler infringed under 271(f)(2) by causing custom components (vehicle chassis implementing the Halo) that were especially made and especially adapted for use in the claim 4 of the '178 invention, which are not a staple article or commodity of commerce suitable for substantial non-infringing use to be supplied from the U.S. to HWA abroad, where such components were uncombined in whole or in part. Upon information and belief, Daimler knew that the customized components were especially made and especially adapted for use in the patent, and intended that such components would be combined outside of the United States in a manner that would infringe claim 4 of the '178 patent if such combination occurred within the United States.

388. Because Mercedes' activities are directed by Daimler and funded by Daimler, Defendant Daimler also induced Mercedes to directly infringe claims 1, 2 and 4 of the '178 patent by importing the inventions in claims 1 and 2. Further, Daimler also induced Mercedes to directly infringe claims 1, 2 and 4 by making and using vehicles implementing Halo (and "jagged windcreens") in the 2018 and 2019 U.S. Grand Prix events at COTA by subsidizing and directing its operations.

389. Defendant Daimler violated Section 271(f)(1) by causing a substantial portion of the components of the invention, including Formula 1 vehicle chassis implementing the Halo, to be supplied to Mercedes outside of the U.S., such that if the parts were assembled in the U.S. they would infringe claim 4 of the '178 patent, and in a manner that actively induced the combination of such components outside the United States. In addition, or alternatively, Daimler infringed under 271(f)(2) by causing custom components that were especially made and especially adapted for use in the patented '178 inventions and not a staple article or commodity of commerce suitable for substantial non-infringing use to be supplied from the U.S. to Mercedes, where such components were uncombined in whole or in part. Upon information and belief, Daimler knew that the customized components were especially made and especially adapted for use in the patented '178 inventions, and intended that such components would be combined outside of the United States in a manner that would infringe claim 4 of the '178 patent if such combination occurred within the United States. Daimler caused each respective act of supply following the 2018 and 2019 U.S. Grand Prix respectively (Mexico in 2018, Brazil in 2019).

390. Defendant Daimler is liable for infringement of the '178 patent, directly or indirectly, literally or by doctrine of equivalents, and its infringement has been and continues to be willful in nature.

391. Mr. Nygaard is entitled to actual and enhanced damages for this willful infringement pursuant to § 284, and attorneys' fees and costs under 35 U.S.C. § 285 as a result of the infringement of the '178 patent from Defendant Daimler because this is an exceptional case.

392. Therefore, Mr. Nygaard is entitled to actual and/or compensatory damages, reasonable royalties, pre-judgment and post-judgment interest, enhanced damages, attorneys' fees, and costs and any other relief to which he is entitled to receive from Defendant Daimler.

COUNT EIGHT

[Dismissed over Plaintiff's Objection]

Infringement by Charles Leclerc

393. Mr. Nygaard incorporates by reference the preceding paragraphs.

394. Mr. Leclerc contracted to race in 2018 in F1 for Alfa Romeo Sauber F1, including at the U.S. Grand Prix at COTA.

395. Mr. Leclerc directly infringed, literally or by equivalents, claim 4 in the 2018 U.S. Grand Prix events at COTA by using a vehicle with the Halo when he drove for the Alfa Romeo Sauber F1 team there. The specific comparison of Claims 1, 2, and 4 that appears at paragraphs 264–283 of Count One, are reasserted and incorporated by reference here, as are the patent (Exhibit A) and the amended illustrative claim charts (Exhibit B).

396. Mr. Leclerc directly infringed claim 4 in the 2019 U.S. Grand Prix events at COTA by using a vehicle with the Halo when he drove for Defendant Ferrari there. Paragraphs 267 to 269, showing how Claims 1, 2, and 4 apply to the Halo are incorporated by reference as are the patent (Exhibit A), and the illustrative claim charts (Exhibit B).

397. When Mr. Leclerc accepted his driving position with the team he knew he would be racing in the 2019 U.S. Grand Prix at COTA in Austin, Texas. Upon information and belief, Mr. Leclerc's 2019 contract with Ferrari paid him millions of dollars for the 2019 F1 Grand Prix Season so that he received substantial compensation for racing at the U.S. COTA in 2019.

398. Mr. Leclerc infringed claims 4, literally or by equivalents, by driving a Ferrari car implementing the Halo at the 2019 U.S. Grand Prix events at COTA. Mr. Leclerc also received substantial benefits because, among other things, he placed "in the points" by finishing in fourth position. The detailed comparison of how claims 1, 2, and 4 apply to a car implementing a Halo

in paragraphs 267 to 269, and also the patent (Exhibit A) and illustrative claim charts (Exhibit B) are incorporated by reference.

399. Upon a finding that Mr. Leclerc infringed the '178 patent, he should be enjoined from using a car implementing the Halo (in its original form or as part of an Aeroscreen) in the U.S. for the duration of the patent. Mr. Leclerc is liable to Mr. Nygaard for a reasonable royalty for his past infringement.

COUNT NINE

[Dismissed over Plaintiff's Objections]

Infringement by Lewis Hamilton

400. Mr. Nygaard incorporates the preceding paragraphs here.

401. Lewis Hamilton directly infringed, literally or by equivalents, claim 4 in the 2018 U.S. Grand Prix events at COTA by using a vehicle implementing the Halo for Defendant Mercedes. Mr. Hamilton placed third in the race. Upon information and belief, on a pro rata basis, Mr. Hamilton would have been paid approximately \$2.5-4 million for this U.S. Grand Prix event.

402. Lewis Hamilton directly infringed, literally or by equivalents, claim 4 in the 2019 U.S. Grand Prix at COTA by driving a vehicle implementing the Halo for Defendant Mercedes. Mr. Hamilton came in second in the race, but clinched his 6th annual Driver's Championship by the points won in the race. Upon information and belief, on a pro rata basis, Mr. Hamilton would have been paid approximately \$2.5-4 million for the U.S. Grand Prix event.

403. Mr. Nygaard incorporates by reference paragraphs 264 to 283 of Count One, which explain how the claims apply to the accused F1 and Formula E cars, the patents attached as Exhibit A and the amended illustrative claim charts attached as Exhibit B.

404. Upon a finding that Mr. Hamilton infringed the '178 patent he should be enjoined from using a car implementing the Halo (in its original form or as part of the Aeroscreen) in the U.S. for the duration of the patent. Mr. Hamilton is liable to Mr. Nygaard for a reasonable royalty for his past infringement.

COUNT TEN

Declaratory Judgment Against FIA, FOM, FOWC, RBR and RBT

405. All preceding paragraphs are incorporated by reference here, including Exhibits A, B and C.

406. In or around July 15, 2021, FOM, FOWC and FIA unveiled a model of a Formula 1 Grand Prix car built according to new rules for 2022.

407. This car has significant design changes to reduce airflow off Formula 1 racing cars to permit for closer racing, more overtaking, and more aggressive driving in races.

408. The racing changes resulting from the new regulations would be more dangerous to drivers, had not the Halo largely, and to date entirely, eliminated injuries to drivers' heads and necks.

409. The 2022 calendar has races in the U.S. both at COTA and a new course in the Miami area. These races will employ the new 2022 regulations.

410. There have been no material changes regarding the placement or construction of the Halo for new 2022 regulations.

411. For the reasons given in Count One, paragraphs 264 to 283, the new Formula 1 cars if built as advertised will infringe claims 1, 2, and 4 of the '178 patent, literally or by equivalents.

412. For the reasons stated in Count One against FIA and Count Two against FOM and FOWC, regarding the Halo in 2022, these defendants will induce and contribute to direct

infringement of all teams and drivers, literally or by equivalents, in Formula One Grand Prix Racing upon entry into the U.S., in making and using the cars for racing. An illustrative claim chart based on the model presented by FOM, FOWC and FIA is attached as Exhibit C, and incorporated by reference.

413. RBT and RBR, for the reasons in Count Five paragraphs 322 to 351, will directly infringe the '178 patent by importing, making and using the inventions, and then supplying their components afterward for reassembly abroad to the next race outside of the U.S. in violation of Section 271(f).

414. Tickets for the Miami race are sold out.

415. There are actual controversies among Plaintiff and these Defendants because they have publicized these events, put them on the calendar and also sold tickets and/or hospitality services, so their plans are firm and they are committed to these racing events.

416. Accordingly, Nygaard seeks a declaratory judgment pursuant to 28 U.S.C. § 2201 that if Defendants go forward as planned in Miami or COTA, that they will be infringing claims 1, 2 and 4 of the '178 patent, literally or by equivalents, under at least Sections 271(b), (c)

417. Nygaard asks for a declaration of his rights, these Defendants' infringement, and their responsibility for the acts of all teams and drivers in the races.

418. Nygaard asks for further necessary or proper relief based on a declaratory judgment or decree may be granted, after reasonable notice and hearing, against any adverse party whose rights have been determined by such judgment, including but not limited to, attorneys' fees and costs.

IX. PRAYER FOR RELIEF

419. In consideration of the foregoing, Nygaard respectfully requests that this Court enter an Order granting the following relief:

- a) Enter judgment in favor of Plaintiff Jens H. S. Nygaard, that Defendants Fédération Internationale de l'Automobile, Formula One Management Ltd., Formula One World Championship Ltd., [Mercedes-Benz Grand Prix Ltd., Daimler AG, Ferrari S.p.A.,]²⁰ Red Bull Technology Ltd., Red Bull Racing, Ltd. and [Dallara Automobili S.p.A.], have each infringed and each continue to infringe U.S. Patent No. 7,494,178, and finding that such infringement is willful as plead above, making this case exceptional as to each of them;
- b) [Judgment that Lewis Hamilton and Charles Leclerc have each directly infringed the '178 patent];
- c) Enjoin future making, offering for sale, selling, using or importing the Halo and Aeroscreen devices and those not colorably different from them in the U.S. unless they obtain a license;
- d) Award Plaintiff Jens H. S. Nygaard all monetary relief available under the patent laws of the United States, including but not limited to, actual and/or compensatory damages, reasonable royalties, pre-judgment and post-judgment interest, enhanced damages, attorneys' fees and costs pursuant to 35 U.S.C. §§ 284, 285;

²⁰ The Defendants in brackets have been dismissed from this lawsuit without prejudice as previously stated, so there is not currently a claim for relief against them.

- e) Declare this case exceptional and award Plaintiff Jens H. S. Nygaard his reasonable attorney fees pursuant to 35 U.S.C. § 285; and
- f) Grant Plaintiff Jens H. S. Nygaard such additional, other, or further relief as the Court deems just and proper.

X. DEMAND FOR JURY TRIAL

420. Mr. Nygaard demands trial by jury on all issues so triable.

Dated: March 12, 2022

Respectfully submitted,

By: /s/ Danielle J. Healey

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that a true and correct copy of the above document was served on March 12, 2022, to all counsel of record via ECF.

/s/ Danielle J. Healey
Danielle J. Healey